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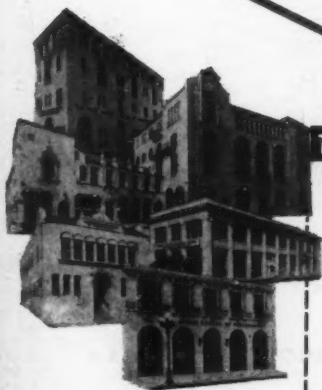
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8mm Kodak Model 25, Sheath	7.75	5.80
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22 EAST 12TH STREET, CINCINNATI 10, OHIO

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## CONTENTS, JUNE, 1949

### Articles

KEEP THE MOVEMENT.....	Francis E. Reiss	26
GIVE YOUR PICTURES AN ABSTRACT FRAME.....	Lou Jacobs, Jr.	32
BAGDAD ON A SUBWAY.....		34
HOW TO MAKE A SPEEDFLASH SYNCHRONIZER.....	Peter Gibbons	38
BASIC COLOR FAULTS.....	Varden and Krause	42
KEYED EMPHASIS.....	Harold Arrigoni	46
PICTURES FOR JUNE.....		50
HOW TO CONVERT SPOTLIGHTS FOR FLASH.....	I. G. Edmonds	58
WHAT PROJECTOR SHOULD I BUY—Part I.....	Eli Willis	66
MELANCHOLY DOLLS.....	Tom Lorenz	74
HANS STEINER.....		78
CLICHES VERRES.....	Merwin Dembling	82
THE BIG EYE.....		86
HOW THIS MONTH'S COVER WAS MADE.....		104

### Departments

THE LAST WORD.....	6
PHOTO MARKETS.....	20
PHOTO DATA.....	88
SALON CALENDAR.....	92
CAMERA CLUBS.....	93
BOOK REVIEWS.....	94
NEW PRODUCTS.....	96
GADGETS, KINKS AND SHORT CUTS.....	103

Gene Idaka



KEEP THE MOVEMENT  
See Page 26

MINICAM PHOTOGRAPHY (TITLE REG. U. S. PAT. OFF.) PUBLISHED AT 22 EAST 12TH ST., CINCINNATI, OHIO. PUBLISHED MONTHLY BY THE AUTOMOBILE DIGEST PUBLISHING CORP. YEARLY SUBSCRIPTION, \$2.50 IN U. S. A. AND POSSESSIONS, CANADA AND COUNTRIES IN PAN-AMERICAN POSTAL UNION, \$3.00. ELSEWHERE, \$3.50. SINGLE COPIES, 75c. CANADA, 90c. EASTERN ADVERTISING OFFICE: EVERETT GELLERT, 251 PARK AVENUE, NEW YORK CITY, PHONE OR 9-3000. MIDWEST ADVERTISING OFFICE: BERNARD A. ROSENTHAL, 333 NO. MICHIGAN, CHICAGO, ILL. PHONE AN 5-0732. WEST COAST ADVERTISING OFFICE: EDMUND J. KERR, 6605 HOLLYWOOD BLVD., LOS ANGELES 28, CALIFORNIA, PHONE HEMPSTEAD 3171. ENTERED AS SECOND CLASS MATTER AT CINCINNATI, OHIO, U. S. A., MARCH 21, 1938, UNDER THE ACT OF MARCH 3, 1879. ESTABLISHED 1937.

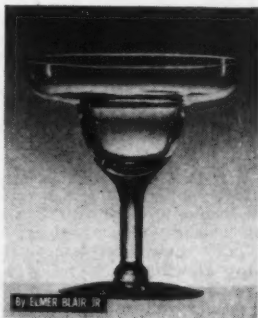
## WHICH PHOTOGRAPHER IS AN SMP GRADUATE?

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2. Sweet and lovely . . . this sensitive, accomplished shot by SMP graduate **RODNEY WILLIAMS** . . . and his brand new, exciting photo-post with famed **LIFE** photographer **LISA LARSEN**! Many an SMP graduate is tapped for the signal honor of joining a ranking big-name photographer. Indeed, an impressive list of top-flight lemmens look to SMP whenever they need a talented assistant!

4. Graphic evidence of lessons in photography well-learned in this professional quality print of a difficult subject by graduate **ELMER L. BLAIR, JR.** (see right). BLAIR had several free-lance assignments under his belt before deciding to perfect his technique at the School . . . now has a promising photo-post with Vannucci's Foto Services in Williamsport, Pa.



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5. This is the way to photo-success! "Springboard to fame" for careerists of all ages is SMP, where specialized courses and advanced techniques are available. Tuition (not) Surprisingly moderate for complete study programs, day or evening. For outline of courses, visit SMP—or write H. F. Sidel, Director, Dept. M6.

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1. Twin requisites for photo success . . . fine artistic perception and technical skill . . . are exhibited in this blue-ribbon print by SMP graduate **ALLAN S. PARK** (see left). Like so many other photographers, PARK began his career by free-lancing. Although many juicy plums came his way—such as doing publicity photos of Frank Sinatra, Tommy Dorsey,

James Mason and a dozen other famous stage, screen, radio and sport stars—ALLAN wisely felt thorough photographic training was necessary for lasting success. He chose SMP . . . advanced brilliantly. Watch for more news of his career in forthcoming issues.

3. Exceedingly attractive to camera-careerists is the top-notch instruction at the School. SMP instruction "brought out the best" in **GEORGE GREGER** (see right) who plans to free-lance in New Mexico before opening his own commercial studio.





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Leica III, cpid, F3.5 Elmar, cc	158.00	112.00	
Leica III, F2 Summar cc	159.00	120.00	
Leica IIIA, F2.8 Elmar, cc	165.00	115.00	
Leica IIIA, F2 Summar, cc	179.00	140.00	
Leica IIIA, F2 Summar, cc, cld.	201.00	160.00	
Leica IIIIS, F2 Summar, cc	229.00	175.00	
Leica IIIIS, F3.5 Elmar cld.	\$280.00	177.00	145.00
Leica IIIC, F2 Summar, cld.	385.00	289.00	210.00
Leica IIIC, F1.5 Xenon, cld.	295.00	225.00	160.00
Contax I, F2.8 Tessar, cc	92.00	130.00	85.00
Contax II, F2 Summar, cc	128.00	150.00	100.00
Contax II, F2 Summar, cc	95.00	232.00	160.00
Contax III, F1.5 Sonnar, cc	249.00	279.00	190.00
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Contax III, F1.5 Sonnar, cc	275.00	310.00	190.00

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Leitz Chroma Vidom Finder	63.00	49.00	33.00
Leitz VIII, Synchronizer	77.50	45.00	30.00
Leitz Image Erecting Finder	123.20	84.00	60.00
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55mm Zeiss Biotar F2.8 W.A.		209.00	150.00
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50mm Sonnar F1.5 Contax		120.00	85.00
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Mercury II, F2.7 ctd. lens	972.50	35.50	25.00
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Perflex 101, cpid F3.5 ctd.	27.00		18.00
Perflex Deluxe, cpid, F2.8 ctd.	85.00	59.00	40.00
Boisey 35, cpid, F3.2 ctd.	55.90	42.00	35.00
Retina I, F3.5 lens	79.00	59.00	50.00
Retina II, A. Bldr., F2 ctd. Extar		144.00	90.00
or Xenon Lens	197.63	144.00	90.00
Agfa Karat II, Bldr., F2.8 Xenon		110.00	80.00
Kodak 35, W.rdr., F3.5 ctd.	88.98	62.00	52.00
Kodak 35, F3.5 lens, case	83.00	63.00	48.00
Praktiflex F2.9 ctd lens		89.00	50.00
Kodak Bantam cpid, cpid, F2 lens, cc		129.00	100.00
Minon F3.5 Lens		138.00	90.00
Kine Exakta, F3.5 Tessar, case	144.00	110.00	90.00
Kine Exakta, F2.8 Tessar, case	230.00	180.00	125.00
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Super Ikonta A, F2.8 Tessar	250.00	210.00	160.00
Super Ikonta B, F2.8 Tessar	264.00	174.00	135.00
Super Ikonta BK, F2.8 Tessar, cc	350.00	250.00	190.00
Medalist II, F3.5 Extar, cc	207.50	185.00	160.00
620 Kodak Tourist, F4.5 ctd., Flash Shutter	71.00	55.00	40.00

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Ciroflex, F2.8 ctd., Alpax	83.25	65.00	48.00
Ciroflex, F3.5 ctd., Rapax cc	107.15	78.00	65.00
Ciroflex II, F3.5 Novar	120.00	99.00	75.00
Rolleiflex II, F3.5 Triotar, cc	140.00	95.00	75.00
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## THE LAST WORD

### News Ahead

For five years, MINICAM's Editors have been laying plans to launch a new kind of a photographic magazine, a larger and more beautiful photographic magazine than we have ever had the privilege of publishing. Now we have news for you. The next issue of MINICAM will be the last under its present mechanical limitations.

Have you ever signed a contract binding yourself to pay a million dollars? There's a tingling feeling about it—like the feeling a boy has when he turns 21, or the kind a girl experiences when she receives her first orchid. This particular contract provides for bigger pages, better printing, better paper stock, and more color.

Beginning with the September 1949 issue, MINICAM will combine with the new magazine we have been planning for you under the name of MODERN PHOTOGRAPHY. Every other month or so, for the past several years, a half dozen copies of the photographic magazine we wanted you to see has been laid out, pasted up, and made into dummy editions for the purpose of criticism and revision. You have played an active part in the making of these "dry runs." Based upon an analysis of your letters, as well as by personal interviews with MINICAM readers, the editors have planned a magazine to meet your needs. The departments and features that you like in MINICAM will be retained; the others will give way to brand new departments.

For complete details on the new magazine, be sure to read "MINICAM Becomes Modern" in the next issue of MINICAM.—The Editors.

### A Camera for Mayola

Sirs:

After reading the article *Jungle Photographer* in the Feb. issue, I felt sorry for Mayola Amici for having to work with such a beat-up camera. In looking over my stock, I came across a 2 1/4x3 1/4 Zeiss Ica plate camera that has been lying around for years. If you could tell me how to contact Mayola, I would like to present it to him with my compliments.

Phila., Pa.

HOWARD TITTELBAUM

• Thank you, Howard, and we are trying to find out how the camera can be sent so as to reach Mayola in the Belgian Congo.—Ed.

Source Material on Billy Bitzer

Sirs:

Your editorial secretary sent me letters from MINICAM readers asking about my sources for



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### REVERE MODEL 40

#### 16mm PROJECTOR

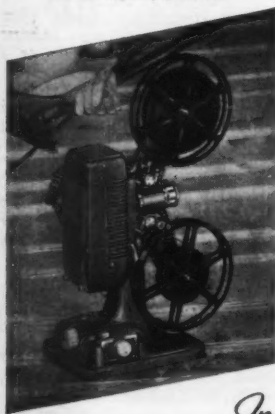
This handsome new model leads the field in value! Simplified threading... handy single knob control... 750-watt illumination... fast 2-inch F1.6 coated lens... speedy automatic re-wind... completely enclosed drive... 400-foot capacity. **\$137.50**



### REVERE MODEL 70 8mm MAGAZINE CAMERA

Smartly designed and simple to use. Outstanding features include magazine loading... continuous run... single frame exposure... telescopic viewfinder... built-in exposure chart... 5 speeds... F2.8 lens, including tax. **\$132.50**

Revere "88" 8mm Camera. F2.5 coated lens. Incl. tax. **\$77.50**



Listen to the REVERE "Jo Stafford Show"  
Thursdays, 9:30 P. M. E. S. T., on ABC, Coast to Coast

# Revere

EIGHTS and SIXTEENS

*In pursuit of happiness Revere adds to your pleasure*

# "LARS IS WORKING WITH ME\* NOW..."



"When it came to sending my son to school, I didn't pick the nearest one, the most expensive one, nor the one with the shortest courses. I picked the Progressive School of Photography in New Haven, where Lars got the background essentials that will make him a top-flight photographer. They don't rush men through courses at Progressive. The courses take a beginner through all phases of black and white and color photography. Those courses were designed by a man who won international recognition not only as a teacher but as a top photographer as well—Bill Gerdes, dean of the school and former president of the Photographers Association of America. Bill Gerdes was selected by the P. A. of A. to head its famed Winona School in Indiana for ten years. The professionals chose him to teach them. I couldn't find a better man to give my son that professional instruction he'll need to get the jump on the rest of the crowd. Lars is working with me now, he's at home in a darkroom or in back of a camera. Progressive training made him worth his salt to me in months — not years."

\*Carl G. Johnson of the famed Ing-John Studio, 162 Bedford Street, Stamford, Conn.

If photography is your choice of a career  
Progressive will save you years  
readying for a professional  
job. Select Progressive —  
the school professionals  
recognize and recommend.

## PROGRESSIVE

SCHOOL OF PHOTOGRAPHY  
217 Park St., New Haven 11, Conn.

Portrait • Commercial  
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Camera Mechanics and Repair  
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Write for Catalog PT-7

the article about Billy Bitzer.

Chiefly these were "A Million and One Nights" by Terry Ramsaye, "When The Movies Were Young" by Linda Arvidson (Mrs. D. W. Griffith) and "D. W. Griffith—American Film Master" by Iris Barry.

In the latter book, appeared a special essay written by Beaumont Newhall titled "A Note On The Photography of Griffith's Films." Mr. Newhall interviewed Bitzer before he died. I found Mr. Newhall's essay especially helpful and understanding.

Dayton, Ohio

JOSEPH V. MASCELLI

Bitzer's Photography Excellent

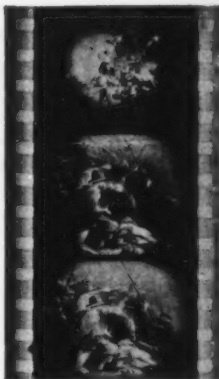
Sirs:

I was greatly interested in the article *Billy Bitzer, Hollywood's First Ace Cameraman* in the March issue.

As a projectionist I ran "The Birth of a Nation" and can vouch that the photography was excellent. Enclosed is a genuine film clipping from this picture. Incidentally I patented a fading in and out shutter for picture projectionists in 1922. This was later used with many cameras for "Diamond" fading effects, and it is still in use.

Manlius, N. Y.

ALFRED WERHAN



Front Shutter or Focal Plane?

Sirs:

In "How to Shoot High Speed Color" (Jan. issue), Mr. Abramson does not indicate whether he refers to a front shutter or a focal plane shutter in speaking of 1/500th shutter speeds. Since there is no Speed Graphic with a front shutter speed of 1/500th second nor a focal plane shutter of exactly that speed, it is very confusing. Can you enlighten me?

Chicago, Ill.

SAMUEL MYSLIS

• The focal-plane shutters of the Pacemaker Speed Graphics have six highly accurate shutter speeds: 1/30, 1/50, 1/120, 1/250, 1/500, 1/1000.—Ed.

Important Decision

Sirs:

In recent issues of MINIGAM I read with interest your articles on Tabletop Photography, Macro-photography, Wide Angle Lenses, Telephoto Lenses, and the use of various films.

The enclosed picture is the net result. Hav-

# QUICK-SET DUPLEX TRIPOD

## A NEW MEMBER OF THE QUICK-SET FAMILY

Now! Light camera owners can have Quick-Set high quality at a new low price! Quick-Set's new Duplex tripod and Pan Head offers strength and rigidity — easy operation — and light, compact construction! The Duplex is made under the same rigid standards that have made Quick-Set tripods famous the world over. The Duplex is recommended for use with box and folding cameras, light reflex and press type cameras, and light motion picture cameras.

### SPECIFICATIONS

Duplex Tripod and Pan Head Combined  
Maximum vertical height, at full spread.....33"  
Overall length, telescoped.....33"  
Weight .....2½ lbs.

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DUPLEX-TRIPOD**

**\$16.85**



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My Photo Dealer is: \_\_\_\_\_

(Please print clearly)

ing loaded a Graphic with Ektachrome, a Rollei with Ansco Color, and three Leicas with the other films you recommended, I set out to photograph a simple flower arrangement. The only difficulty I experienced had to do with

arriving at an important decision you failed to cover in your excellent articles. Which cable release do I press first?

Three Rivers, Mich.

EDWIN S. KNAPP

• None of them at the moment, Mr. Knapp. You forgot to cock the shutters.—Ed.



#### Television Training

Sirs:

We believe you will be interested to learn of a long-planned expansion for the New Institute for Film and Television which has occurred since you published your booklet, "Photographic Schools."

Beginning in September, we are establishing a full-time day school for training in motion picture and television production. The day classes will run 25 hours a week, and the evening program of 16 hours weekly, will continue as at present.

Our courses include camera and lighting technique, cutting and editing, use of sound, scenario writing, direction, live show production for television and making a television newsreel. The New Institute has a fully-equipped sound stage for motion picture production. In the Film Workshop, advanced students make a complete dialogue film. The New Institute is approved by the Veterans Administration and the New York State Department of Education.

Brooklyn, N. Y.

Marguerite Temple,  
Director



#### 35mm COMBINATION OFFER



100' 35mm film (any emulsion).....	Reg. \$7.43
Delta Bulk Film Loader .....	6.63
6 empty 35mm cartridges (used).....	.60

Total \$14.66

Our Special Offer F.O.B. New York (Ship. Wt. 8 lbs.) You save \$8.41!!

**\$6.25**

#### KINE EXAKTA BAYONET EXTENSION TUBE

Ideal for copying and close-up work with the Kine Exakta. Has 2 adapters, 3 extension tubes. Complete, postpaid.

**\$17.50**

#### FOCUSING HOOD FOR KINE EXAKTA CAMERAS

Fits perfectly over the camera. Excludes all light to assist in focusing. Made of durable material. Fully guaranteed. Immediate delivery. Postpaid.

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#### MICROSCOPE ADAPTER FOR KINE EXAKTA

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SIZES: 127 — 620 — 116 — 816

ONLY \$1.50 Per Dozen Rolls  
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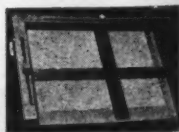
3 Dozen for **\$4.25** 6 Dozen for **\$8.00**

(Fully panchromatic, sensitive to all colors, 50 Weston in daylight.)

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shipments.

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"Negative Faults and Remedies". Write today for your copy of this helpful, well-illustrated booklet. No obligation. Your name on our mailing list will put you "in-the-know" of the Delta Dollar Savers always available to our customers.

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WALLET SIZE

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Let us make sparkling, full-color prints from your favorite transparencies. Painstaking care and personal attention of highly skilled craftsmen assure correct results.

2 1/2 x 3 1/2	each	\$ .30
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3 1/4 x 4	each	.50
4 x 5	each	.65
5 x 7	each	1.25
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35 MM Color Duplicates 25c

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Wedding Photographers*

ANSCO and EKTACHROME **\$1.00**  
color rolls developed ea.

MINIMUM ORDER \$1.00 (NO C.O.D.'s)

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**24 hr.  
SERVICE**

First Class  
INSURED  
RETURN



### Censored Nude

Sirs:

Up until recently I always got what I paid for, but in the March issue (page 55) you evidently printed a nude (Andre de Dienes' nude—Ed.) that our city censor considered unfit for our morals. I have not yet seen the picture, but a friend has promised to smuggle in a complete copy. On the other side (and here is the rub) was the beginning of what seemed to be a very interesting article called *Tracking The Electron*. In the future please don't mix your nudes and electrons. When you print a picture that may be censored in Lynn, please do so on a page the back of which is left blank; then when our censor tears it out, the rest of the magazine won't suffer.

Lynn has gained a semi-comic reputation for its arbitrary censoring procedures, but from this side of the fence it just isn't funny. Of course I could subscribe to MINICAM or buy it in an adjacent town, but it's the principle of the thing: Your excellent magazine is being arbitrarily defaced by a one-man censorship board and the customer has no way of knowing it until after the purchase has been made.

East Lynn, Mass.

WILLIAM EMERSON

• In principle we believe that the press, like the movies, benefits by the restraining hand of good censorship. But good and consistent censorship is hard to find. The picture that a censor in one city labels objectionable may strike the censor in a neighboring city as an

artistic triumph. Until the day arrives when there is some sort of consistency in censorship, we will continue to print only those pictures which we believe to be examples of good photography and artistic expression.—Ed.

Posy for De Dienes

Sirs:

I wish to express my appreciation of the picture of Linda Christian by Andre de Dienes in your April number. The picture is well done and the model is extremely attractive.

There was a similar picture by Mr. Dienes on page 17 of your July 1948 issue. I hope these will not be the last ones. Even a more formal picture would be interesting to me and I venture to say it would not be without public appreciation.

St. Louis, Mo.

HARLAN E. WYKOFF

"Lousiest" Issue

Sirs:

It's been 5 years since I wrote an editor to let off steam, but believe me I've filed better prints in the waste basket than you published in the April issue. My friends agree with me that this was the lousiest issue you ever published.

Flushing, N. Y.

TEC DANSENBERG

• It's neighborly of you to give us your re-



Whatever the light,  
whatever the subject . . .  
always GOOD PHOTOGRAPHS  
with

# Panchromosa

## Rollfilm

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Optar. Flash Shutter. R.F. Flash Unit.  
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Optar. Flash Shutter. R.F. Flash Unit.  
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(D) - 3 1/2" x 3 1/2" Speed Graphic Outfit: F/4.7  
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Shutter. F/4.7. 3 1/2" Flash Unit. \$170.00—  
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(E) - Kodak "35" with Rangefinder: F/3.5.  
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(D) - Kodak Model II: F/3.5. Star. Flash  
Shutter. Case. \$112.50—\$21.00 Down  
(C) - 6mm Kodak Mafoline 16mm: F/1.9.  
\$120.00—\$10.00 Down

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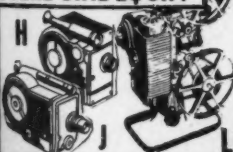
## BUSCH PRESSMAN



(F) - 3 1/2" x 3 1/2" Busch Press Outfit: F/4.5  
Ranger. R.F. \$171.50—\$17.50 Down  
(G) - 4" x 5" Busch Press Outfit: F/4.7  
Ranger Shutter. Vuo-Focus. R.F. \$170.00—  
\$27.00 Down

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(H) - Revere "78" 8mm Magazine: F/3.5.  
\$120.00—\$12.00 Down  
(I) - Revere "78" 16mm Magazine: F/3.5.  
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(J) - Revere "88" 8mm Projector: \$127.50—  
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(K) - Revere "88" 16mm Projector: \$127.50—  
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	List Price
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12 Rolls Eastman or Ansco	12.00
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Argus C3 with F/3.5 coated lens, built-in Rangefinder, Flash gun and carrying case	74.71	\$74.71
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4 Filters at 9.00	36.00	
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1 roll color film	3.50	

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SAVE \$48.93 on NEW  
DELUXE PERFEX 8mm MOVIE  
OUTFIT



	Price
Perfex 8mm Magazine Camera, New	\$ 99.50
Keystone 8mm Projector, New	34.50
Genuine Beaded Screen 30" x 40", New	15.00
1 Magazine 8mm Bk. & White Film	3.43
1 200 Ft. Cartron Subject	5.00
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Complete with regular head and extra color head and 3 negative carriers. \$70.50—\$7.00 Down  
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4 Models to Choose From  
All with F/3.5 Coated  
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\*Send the equipment on attached order. If not completely satisfied I may return all or part of order within 10 days for refund. I am enclosing my letter and \$..... on down payment. I agree to pay \$..... per month until merchandise is paid for. ( 1 x cut over 51 / 2 x cut under 51 )  
Name .....  
Address .....  
City..... State.....

# The General Camera Co.

Mail Order Division, Dept. AC, Chicago 45  
Two Great Stores in Chicago  
In the Loop On the North Side  
Main Floor Merchandise Mart 2308 Devon Ave.

actions to the April issue, Tec, but couldn't you be a bit more constructive? Why not tell us specifically what you disliked or, better yet, why not let us see some of those waste basket prints you mention?—Ed.

#### Model Releases

• So many readers have queried us as to where they can buy printed model releases that we have made up a very limited supply. These releases come in pads of 25 each and cost 25c per pad. For the present, at least, we must limit orders to four pads to a reader. Orders should be addressed to Kirk Polking, Editorial Secretary, MINICAM, 22 East 12th Street, Cincinnati 10, Ohio.

#### The Girl in the Glamour Pose

Sirs:

Of all the beautiful girls that have appeared in MINICAM in the past 10 years, the girl on page 41 of the March issue takes my vote for being the loveliest of all. Can you tell me anything about her? Is she a professional model?

Omaha, Nebr.

DWIGHT GILBERT

• Her name is Shirley Ford, she is eighteen years old, and was trained in modeling by George Boardman. You have seen her before in Boardman's articles (although not in glam-



our poses) in both MINICAM and amateur movie publications. The above picture of Miss Ford is the one that appears on Boardman's business cards.—Ed.

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and see how good  
you really are



**Ikonta C Popular** 2 1/4 x 3 1/4" direct-view model. Novar f/4.5 or Zeiss Tessar f/3.5 lens



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graduates  
lead the field

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Don't let the fact that you cannot attend our Resident School keep you out of photography! You can become a "crackerjack" photographer by studying at home in your spare time without taking a day off from your present job! The N. Y. I. Home Study Course is a short cut to success. The finest home study course is clearly printed, beautifully illustrated, and substantially bound. Here is up-to-the-minute photographic knowledge—written by recognized authorities and so clearly presented that you'll learn quickly and easily. Better still—you'll get INDIVIDUALIZED supervision from our instructors—helpful criticism and ideas for the improvement of your work.

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## Karsh Needn't Worry

Sirs:

Although I have been a reader of MINICAM for a number of years, this is the first letter-writing I have done. I am particularly glad to be able to read a magazine that is not too hotsy-totsy to keep articles on the level of the average beginner. There are a heck of a lot more amateurs who use up the available film supply than there are professionals, and those pros know where to go for their information when they need it. A publication of this type is supposed to be for general information, according to my ideas on the subject, and it seems to me that you are doing just about as good a job as can be done.

I got annoyed a few months ago when some of your readers protested an article aimed at beginners. Those people probably overlooked the fact that even they had to learn, once upon a time. None of my pictures will ever cause Mr. Karsh or Ozzie Sweet to break out in a rash, but I like them and so do the other folks who read your articles like the pictures they turn out. Enjoyment of the hobby is the main idea, whether it is photography, modeling, painting or collecting odd bits of string. So, keep things as they are now and let the big shots do all their own research.

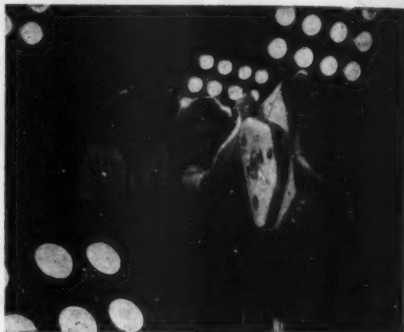
Houston, Texas

ALBERT HOLLMANN

## The Other Side of Television

Sirs:

I enjoyed reading your articles about photographing the images on television screens. (*Celebrities In Your Living Room*, April issue



—Ed.) Since none of your pictures showed the cameras on the "other side" of the screen, however, you might be interested in a picture made in a studio when television cameras were still awesome boxes of glass and gears.

Chicago, Ill.

GENE IDAKA

• To us, Mr. Idaka, they still are!—Ed.

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### THE NEW EXPOSURE METER

**Easier** because it's so simple to use—just Press, Set, Read.

**Easier** because the PR-1 meter is so complete. It meets every need—incident or reflected light, movies or stills—and there's nothing extra to buy. All for **\$32.50\***. See it and the new Photo Data Book at your photo dealer's. General Electric, Schenectady 5, N. Y.

**The Meter with a MEMORY**

Other dependable G-E meters...\$19.95\* and \$21.95\*

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35 mm  
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Graceful, quick, easily handled and dependable. Ideal for family use, travel or sports. No double exposure—no loss by over-winding, for the automatic locking device protects you from mistakes. The automatic counter registers each exposure. Built-in optical finder. Special shutter release on body of camera gives operator a firm grasp, eliminating camera movement. Beautiful construction in black and chrome.

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Rapid Shutter—speeds from 1 sec.  
to 1/500  
**\$80.50**  
Carrying Case  
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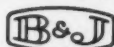
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you get more,  
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when you buy a



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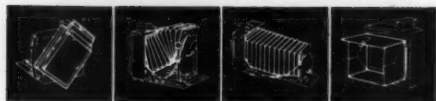
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1949

FINE PHOTOGRAPHIC EQUIPMENT FOR OVER 52 YEARS

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## YEARS OF ENLARGING FUN IN THIS SMALL CASE

CARRYING  
CASE OPTIONAL  
\$6.95  
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### FEDERAL STORE-AWAY

#### MODEL 269 ENLARGER

There's no greater photo thrill than blowing up shots into large, prize winning pictures, in which every detail gains new values.

And you don't need a professional dark-room to do this—not if you have the new, exclusive Federal 269 Store-Away Enlarger.

Within 39 seconds, you can take this sturdy, amazingly efficient instrument from its case, set it up on your kitchen table and be ready to go to work. And you'll find Federal's many precision-perfect features will combine to give you evenings of satisfaction and fun—making crisp, brilliant prints you'll delight in framing.

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**ILLUMINATION:** Parabolic reflector, diffusion type.

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**\$39.50**  
TAX INCLUDED  
COMPLETE WITH DECA  
F.63 ANASTIGMAT  
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AMERICA'S GREATEST ENLARGER VALUE

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# PHOTO MARKETS



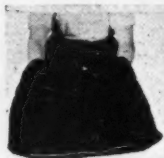
BY KIRK POLKING

**The Jacob Ruppert Brewery** is looking for 40 pictures for use in its advertising for which it will pay \$250 each. They list these requirements: 1. Take a close-up picture (any size) of any adult male or female portraying a "Smile of Pleasure" after sampling Ruppert beer. Photographs of minors, animals or other trick shots are not acceptable. 2. Paste or print your name and address on the back of your print (preferably glossy) and mail to: Ruppert "Smile of Pleasure," P.O. Box 4, New York 46, N. Y., before midnight July 31st, 1949. Submit as many photos as you wish but each must bear your name and address. All photos will be examined for easy, natural human expression of enjoyment, art and photographic composition, and suitability for advertising. Almost any setting is permissible—home, beach, picnic, etc. All pictures become the property of Jacob Ruppert Brewery to use as they see fit. No

pictures will be acknowledged or returned.

**The United States Time Corporation**, makers of Ingersoll watches, are sponsoring a \$250,000 photographic contest, from June 1st to August 1st, 1949. The public (all ages, amateur or professional) is invited to enter as many photographs of Ingersoll displays as they desire. These pictures are photographed in cooperation with local Ingersoll dealers who are partners with the photographer, and will receive a duplicate prize if the photograph wins. All photographs will be judged as to (a) their photographic quality and (b) their value and content of an Ingersoll display. The top winners of the eleven districts will be eligible for the major prize—a completely equipped and furnished house with garage. Each winner and his dealer will receive a similar prize. For further details see your local Ingersoll dealer.

## SPECIAL! TRAVELING AND HOME PHOTOGRAPHERS MELROSE ZIPPER CHANGING BAGS



17 x 21 ..... \$5.75  
29 x 34 ..... 8.75  
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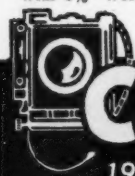
The protection you have been looking for. No need to black-out your kitchen, nor search for a darkroom when you have one of our changing bags to load your film holders or film tank.

Ideal for unloading or adjusting jammed cine and still cameras on the spot in broad daylight, without loss of film. Holders are slipped into the end of the bag, which is then closed with the zipper fastener. Your hands slip through the sleeves which have rubber wrist bands to keep out the light.

A superior bag made of the finest light-tight material with DOUBLE PROTECTION.

## BRAND NEW KODAK PRECISION ENLARGERS 1/3 OFF LIST

Model A (up to 2 1/4 x 3 1/4)  
Choice of negative carrier, less lens ..... \$ 95.00  
With 4" f4.5 Kodak Proj. Anas (L) (Special) ..... \$125.00  
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EVERYTHING PHOTOGRAPHIC

**COLUMBUS** Photo Supply

1949 BROADWAY, NEW YORK 23, N. Y. (AT 66th ST.)

## TRADE NOW! FOR \$75.00 AND YOUR KODAK REFLEX I . . . YOU GET THE LATEST NEW

### IMPROVED MODEL KODAK REFLEX II

featuring:

- Ektalite Field lens 2 1/2 times brighter 10 times at corners
- Automatic film stop — indicates exposure numbers automatically
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If you own a  
Argoflex E \$40.00  
Argoflex EM 50.00  
Ciroflex B 55.00  
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Write for trade-in values on other equipment you may have  
(Subject to inspection)

## SOUND KODASCOPE F S 10 N BRAND NEW—FULL FACTORY REGISTRATION AND GUARANTEE

### OUR SPECIAL PRICE

(Good to June 30th only)

**\$287.50** Shipped Prepaid

Former list value—\$500.00

**Masonic Tidings**, 1445 N. Fifth Street, Milwaukee 12, Wisconsin writes us that they are anxious to obtain copy material and photographs for their magazine. Allan Adams of that publication says: "The readers of MASONIC TIDINGS are members of Masonic Lodges, Eastern Star, De Molay, Job's Daughters, etc. In the various Masonic affiliated lodges and temples, libraries and museums there are many interesting illustrations, art and pictures, that would make interesting material for TIDINGS. We would like *photo copies* of these illustrations and pictures. Many Masonic people have collections of interesting illustrations and books from which material could be copied." Mr. Adams says that their publication is not "trade paper" but it is an illustrated type of publication of interesting living for everyone in Masonic families to read—men, women and children. For photos, it pays \$3.00 to \$10.00 and for short material of 400 to 1000 words it pays 1c to 5c a word.

**Flower Grower**, 2049 Grand Central Terminal, New York 17, New York. Mr. Paul V. Frese, Editor, gives us the following specifications:

1. Dramatic pictures of flowers and small gardens of nice design.
2. Color principally; black-and-white of gardens only.
3. Color:  $3\frac{1}{4} \times 4\frac{1}{4}$ ; Black-and-white:  $5 \times 7$ .
4. Color: \$50.00 minimum; Black-and-white: \$5.00 minimum.
5. Return postage required.

**Profitable Hobbies**, 24th and Burlington, Kansas City 16, Missouri, wants picture stories, each about an individual hobbyist, or family hobby partnership. It uses one of these each month, hobbies which are yielding a financial profit preferred. From six to ten black-and-white,  $8 \times 10$  prints, each with complete caption, should be accompanied by from 200 to 400 words of text. Average price for one of these features ranges from \$30 to \$40, but may go higher, depending upon quality and number of photographs used. Payment is made at time of acceptance. The magazine also uses one photograph each month to head a column called "This Hobby World." This should be of some hobbyist actively engaging in his hobby. Address material and inquiries to Theodore M. O'Leary, Editor.

**Good Photography**, 67 W. 44th Street, New York 18, N. Y., is looking for pictures to use in the Salon Section of their 11th edition. Amateur and professional photographers are invited to submit photographs. Entry blanks are not required and there is no limit to the number of entries that a contestant may send in. All prints accepted will be paid for at the rate of \$10.00 per picture. Pictures may be black and white or toned and should measure at least  $5 \times 7$ . Be sure to include name, address and technical picture-taking data on the back of each print. All material should be securely wrapped. Unused pictures will be returned if accompanied by a self-addressed, stamped envelope.



*Increase Film  
Speeds 10 Times*

**PROVEN  
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**GOLD-XX**—SUPERB WITH STROBO—DAYLIGHT AND MAZDA—VERY FINE GRAIN.

**"S-35"**—Especially for 35mm film. Practically Grainless.

**"EF"**—UNEQUALLED FOR ELECTRONIC—FLASH—CONTRAST—DETAIL—SPEED.

**SPEED**—Increase Manufacturers' Rated Film Speeds 10 Times in Daylight and 5 Times in Photoflood.

**QUALITY**—FINE GRAIN—SHARP OUTLINE—SHADOW AND HIGH-LIGHT DETAIL—HARD EMULSION—LONG LIFE.

**ECONOMY**—VON-L develops more than 7,500 square inches of film per gallon without replenisher. Keeps INDEFINITELY.

**VON-L DEVELOPERS STAND ALONE—AT THE TOP**

**THE WORLD'S FINEST**

*Ask Your Dealer or Order Direct*

**MON-BLANC CHEMICAL CO., Fort Wayne 3, Ind., or Spearman, Texas**

# Most Popular Color Process— PHOTO-OIL COLORING



## MORE COLORED PRINTS ARE MADE BY USING PHOTO-OIL COLORS THAN BY ANY OTHER COLOR PROCESS



It is more economical to make black-and-white shots for hand-coloring than to use expensive color film and print paper. The retouching of direct color shots is often more expensive than a complete hand-colored job done with MARSHALL'S PHOTO-OIL COLORS. In hand-coloring, you get the exact color you want, *where you want it*.

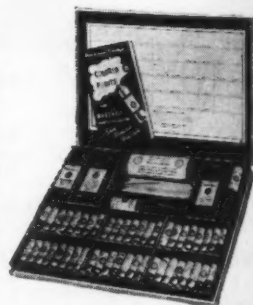
Professionals take advantage of the greater shutter speeds, obtainable in black-and-white, to produce action-packed prints.

## *It's Fun! It's Easy!—It's Economical!*

Marshall's Photo-Oil Colors will bring to life the wonderful colors which lie hidden in your favorite black-and-white photos. You'll be happy right from the start with the swell results you get! No special skill needed! No brushes necessary! You cannot ruin a prized print!

Everybody can afford color! Thousands of users of MARSHALL'S PHOTO-OIL COLORS enjoy the thrill of COLOR PHOTOGRAPHY, WITHOUT COLOR COSTS. Breath-taking color "hits" cost but a *fraction of a penny per print*! Many people who started hand-coloring photos as a hobby, now make a living working for portrait studios or earn pin money selling their handicraft to friends and neighbors.

Send 15¢ today for your copy of the 32-page illustrated book, "How to Make Beautiful Color Prints with Marshall's Photo-Oil Colors."



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FOR 8 MM CAMERAS

12.7mm, f/2.8  
fixed focus

14mm, f/1.9



25mm, f/2.7



37.5mm, f/3.5

FOR 16 MM CAMERAS

15mm, f/2.7  
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26mm, f/1.9



50mm, f/3.5



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Now  
You Can Have  
TOP IMAGE  
QUALITY  
in  
Ciné Lenses

Now, it's Bausch & Lomb Animar Lenses . . . for professional quality in your movies.

For many years, the world's leading cameramen in the big name studios of Hollywood have preferred Bausch & Lomb Baltar Lenses. Hollywood's finest motion pictures have been filmed with Baltars.

All of the experienced lens design and manufacturing know-how, accumulated by Bausch & Lomb in producing lenses for super-critical motion picture cameramen, has gone into the development of the new Animar series of lenses.

Now you can have crisp, sparkling, brilliant images . . . TOP IMAGE QUALITY . . . that films movies in their full magnificence of fine detail, subtle tone, and brilliant color. Use Bausch & Lomb Animar Lenses.



*"For professional quality in Your movies"*



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Get your FREE copy of this new folder on Bausch & Lomb Animar Lenses from your local dealer . . . or write Bausch & Lomb Optical Co., 548 E. Smith St., Rochester 2, N. Y.

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**AS EASY TO READ**  
as a watch...and  
**AS ACCURATE AS**  
Naval Observatory Time...

## NORWOOD Director

INCIDENT LIGHT  
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← with the amazing photosphere\*



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ONLY the Norwood Director features the amazing PHOTO-SPHERE — the 3-dimensional light collector and integrator which gathers and distributes directly to the photoelectric cell ALL of the incident light illuminating the camera side of the subject.

**Anybody** — yes, anybody — can get excellent results the first time with a Norwood Director. No tilting, guessing, compensating. You merely point the PHOTOSPHERE at the camera, line up the dial with the needle, and you read the exposure directly, easily, accurately. And it's versatile — for black-and-white, color, stills or movies. **\$29.95**, plus tax, complete with leatherette covered, gold stamped, plush-lined steel carrying case, neck cord, instruction manual, ASA indexes, registration-guarantee card and calibration certificate.

At your dealer's, or write for free, illustrated booklet, "Correct Exposure Determination."



**AMERICAN BOLEX COMPANY, INC.**

321 Fifth Avenue • New York 17, N. Y.





This glorious color picture was taken on Ansco Color Positive Film by A. C. Shelton in Rocky Mountain National Park, Colorado. The exposure was 1/10 second at approximately f14 in early morning June sunlight.

*Biggest thrill since color—*  
**ANSCO** *true color!*

Everyone knows what a thrill there is in pictures in color.

But people who shoot Ansco Color Positive Film know the extra thrill of natural, real, *true-color* transparencies! Sky hues, flesh tones and the delicate colors of nature really look like their originals on this glorious color material.

Of course, you know you can do your own

processing with Ansco Color . . . and see the gorgeous results in 90 minutes! You can make full color prints on Ansco Printon in your own enlarger, or printer—direct from the transparency, without separation negatives and dye solutions. . . . Get Ansco Color Positive Film in 35mm magazines, 120 or 620 rolls, sheet sizes, or in 16mm movie spools! **Ansco, Binghamton, New York.**



Ask for **ANSCO** *true-color film!*

"From Research to Reality"  
 A DIVISION OF GENERAL ANILINE & FILM CORPORATION

# KEEP THE MOVEMENT

Any photograph gains strength from motion or the suggestion of action.

IN AN ALLEY off Montmartre, Paris, there stands an isolated lamp post. Lovers meet in its soft, flattering glow by night. Its the end of a walk mothers with children in perambulators take by day. Dogs know it as a clearing house of neighborhood news.

But to a strolling connoisseur of latent images, it is just a lamp post, a cold straight, cast iron monolith in the ground, reading up toward the sky. Not much

help, apparently, in stopping a picture editor's roving eye, be the print ever so well oiled and printed on platinum stock.

But take cheer, young connoisseur, this lamp post, or most any other, can come to life, have texture, depth and feeling and perspective. The addition of just these elements, gradation (different from texture, it emphasizes not the shape of a thing but its tone values,) perspective,



BY FRANCIS E. REISS

Photographs, except as noted, are by the author.

texture, and most important of all, line, (or the placing of objects in such a relation to each other to form a composition) will make a "picture" out of something that seemed sterile.

What will have happened is that a formerly static subject has been given "movement." By careful planning of the composition and its details the eye will have been induced to travel over the picture area, to find interest in all its parts. The purely static value of the straight line in the lamp post will have been replaced by the other details and general composition of the scene.

However, this method of making a picture come to life, by means of the composition and details, is only one way.

There is a second. To catch actual spontaneous movement in the subject.

This may fall into either of two forms: the final print may show some good lively expression, like a baby's laughing face or a speaker's gesticulating hands; or, the final print contains some actual movement in the subject. But this kind of movement must be ever so slight and well planned, else the picture will merely look fuzzy. It has to be confined to the feet, legs or hands and is almost never permissible in the face or body.

Movement of this kind is usually called for when a straight-forward "frozen" shot would not give a sufficiently strong or correct impression of what had actually been going on.

For instance, if a horse is jumping over a hurdle, we do not actually see the horse static in midair, it is moving the whole time. To show it in the photograph with its legs rigid would not convey the impression half as well as if there were some slight movement still to be seen in its hoofs and the lower parts of its legs.



THE GENTLE SWELLS, and the waves on the shore take the hazy morning color shot of Gulf fishermen out of the pictorial class, yet maintain its peaceful quality. The shadow of the streetlamp in Paris is an example of the change that is possible in picturing a prosaic object. Here the texture of the wall broke up the shadow line and the two figures brought human activity into the composition.



Often, when the elements of a careful composition cannot be applied because of special circumstances the above method is the best and easiest of making a picture come to life.

Once, after covering a political convention for a picture magazine, I came back in the mood only a photographer can know when he is about to place on the editor's desk a set of beautifully lit and composed pictures. In fact my wires had tripped people all day in my efforts

to get them properly "lit." But the picture editor wasn't happy. He said he wanted L-I-F-E, in quotes. Swallowing an editor's frustration, he condescendingly pointed out that all my opinionated politicians had their mouths tightly shut, with apparently nothing to say. All I had achieved in getting was a set of beautifully composed and lit portraits, but no real impression of what had been going on.

Next day I went back with a Leica and



IT ALL depends on which island you live. If it is Manhattan where you grab for a lunch-stool, a strap in the subway, a spot in the sun along with several million other people, you can pass up a sleeper on the subway steps without asking your conscience whether you are your brother's keeper. If it is Coronado, off San Diego, you know everyone in town and such a sight would stop any passer-by. The motion in this picture comes from strong diagonal lines played against the two principal figures. Made with a Leica camera, Supper XX film at 7:00 p. m. on an August evening 1947. The film was underexposed and overdeveloped in DK-20. The lens used was the Elmar wide angle, at an aperture of F:3.5 and a speed of 1/40th second. Photo by Francis Reiss, courtesy LIFE, © TIME Inc.

an F:2 aperture lens, said goodbye to nice lighting and caught the characters with their mouths open and hands flapping in the air; the editor was happy. He did not mind the movement here and there, what he wanted was to show his readers what the convention had been like.

I learned my lesson; all speechmakers look like cod swallowing water to me now.

This lesson applies to everyday subjects too, wherever portrayal of animation is the keynote. But to apply it well the

photographer must train himself. He must learn to watch his subject and wait for the best moment to shoot. Often this will be at the peak of the action, when it is easiest to get a fairly sharp picture. Here the photographer must be his own judge as to what extent he should let movement show in the picture.

Most camera instruction books give the shutter speeds necessary for altogether arresting motion. A speed a little slower than that indicated will often give just the



right amount of movement to the feet or hands for the picture to look really spontaneous and candid. When a fashion photographer first used a fan to blow the skirt of his model he made use of this principle and it is common practice of many magazine photographers now.

An interesting experiment in conveying the idea of lateral movement can be made with a racing car or horses. Either the camera can be "panned" to get the car or horses sharp at the expense of a blurred background or the maximum shutter speed can be used with the camera held still and the horses or car will still show some movement in the finished picture. It is a matter of preference for the photographer, but for those not possessing very fast shutters, the "panning" method will render a very good impression of the race.

To retain this atmosphere of motion a great many effects under the one convenient heading of "composition" are employed. For we say that if the composition is good, then the picture itself will have gone a long way towards being good. The composition will have done its part by



succeeding in inducing the eye to travel over the surface of the picture in a satisfactory, orderly way. And it is through this movement of the eye that the final

*(Continued on page 114)*



**THE SUGGESTION** of movement by a familiar action which we associate with motion makes the old lady at the top of the page speak to us. In the circus picture we have the dogs in motion and the slight fuzziness in the pony's mane to keep the impression of movement. The Kansas storm picture, right, has strong perspective in the wires and tracks. Try to see if you can keep your eyes from moving from left to right if you look steadily at the picture for a few seconds.



# give your pictures an abstract frame



BY LOU JACOBS, JR.

PRISMS, mirrors, and blocks of cut glass have always fascinated experimental photographers who have an eye for abstract patterns. A decade or so ago, however, the reflecting facets an experimentalist had to work with depended largely upon whatever ready-made objects he could find in the stores. Nowadays it is different. Clear plastics make it possible for a person to obtain practically any shape of translucent object he needs.

Hobby shops and advertisers in the pages of various mechanics magazines offer a variety of plastic materials, some of which can be bent or sawed to shape, and others (in liquid forms) that can be cast. The plastic block shown on this page (above) was made of clear plastic cast in a mold that had been modeled from clay. Having no parallel sides, and being of varying thicknesses throughout, it lends itself to a variety of experiments.

In building up a stock of "abstract" negatives for future use in double printing, the block of plastic was photographed against green felt similar to that used on pool tables. The darkness of this background emphasized the transparency of the plastic. Ordinary photoflood lights in reflectors and a 500 watt spotlight supplied the illumination, sometimes directly, and sometimes reflected off the ceiling. Wherever sections of the plastic appear chalky white in the photographs, facets of the plastic have acted as mirrors to reflect the light back toward the camera lens. To avoid this "blocking up" on some negatives, reflected light was used.

Some of the negatives were given multiple exposures with either the plastic block or the camera shifted between exposures. Later on these negatives were printed either singly or in combination

*(Continued on page 109)*





LIQUID plastic was poured in a clay mold to form the irregular block shown in these pictures. At the left (opposite page) is a double exposure of the block of plastic as it was photographed on a piece of green velvet. The picture at the right is a straight portrait made against a dark background. For the final picture (above) an abstract frame was created by masking out the center of a negative containing multiple exposures of the plastic block. The portrait negative was then printed into the empty area within.

*Photos: Lou Jacobs, Jr.*



ED FEINGERSH OF PIX  
TELLS HOW HE MAKES  
HIS "BAD LIGHT" SHOTS  
WITH SMALL CAMERAS

# Bagdad on a subway

O. HENRY had a style that was keyed to the staccato tempo of New York—he liked to call it “Bagdad-on-the-subway”—and many of the sobriquets that he coined are still fresh today. With words he made the writers, the bums and the innocents from the country come to life. With pictures a few photographers have done the same thing: Lewis Hine of Ellis Island, Berenice Abbott of New York and a parade of recent more or less successful documenters. Photography is like that; it goes along on the same track; sharp pictures for a year or two then a rash of fuzzy ones. Suddenly a newcomer turns up with some



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ideas of his own on picture-making.

Over from Brooklyn last year came a frail, inconspicuous guy named Ed Feingersh, on the subway. Nothing unusual about his looks, he wasn't carrying a big camera with flash equipment. In fact, half of the 10-minute ride went by without anyone even noticing that he had a camera hanging under his topcoat. He was spending some time riding the subways. "I wanted to show real people in

real situations," he says, "without resorting to the dream world of the pictorialists."

Subways are just one of the tough subjects that Ed Feingersh has tackled. His pictures in the snow and rain, in the bad light of street corners at night are all part of his way of seeing with his camera. "My approach is emotional rather than intellectual; I want to see something, absorb it and become a part of it, and get a picture of it. I can't stand flash

TO A CITY KID, growing up without knowing the soft spring of turf under his feet, the subway is a normal way to get around town. Old enough to give the advertising cards a cynical once-over he has not yet reached the "defense in depth" stage of warding off jostlers with a newspaper barricade. These are photos Feingersh made with a Contax. He uses no flash, only the natural, bad light.





because it destroys the mood and brings in artificial values. When I take pictures on a subway I want the final print to smell like a subway and have the jiggle and noise of the 7th Avenue line."

Instead of limiting himself with the shallow depth of focus that goes with fast lenses he has used it as a part of his pictures' composition. Sometimes he lets the background go out of focus; the other times he brings the out of focus area to the foreground. Speaking of his camera and methods, Ed Feingersh says, "Large cameras and flash destroyed the naturalness that I was determined to capture,

*(Continued on page 119)*

IF YOU are willing to forget about grain and the rules of pictorial photography, you can come up with bad light shots that have a mood and an emotion as do these pictures of Ed Feingersh. He uses the fastest pan film and D-72 developer to get maximum speed out of his camera. The two on this page were made with a Rollei and the one opposite with a Leica, at speeds from 1/5 to 1/25 second.



ON A SUBWAY some people sleep, others read and some dream. Or you can just sit—if you can find a seat. Feingersh found the best picture-taking time was late at night. Then there was room to uncap a lens and separate the subjects.

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how to make a

## SPEEDFLASH SYNCHRONIZER

BY PETER GIBBONS

SOME OF us who have fine lenses and shutters without built-in synchro-flash contacts consider them antiquated because they cannot be adapted to speedlight or electronic flash without considerable expense. For a very small cost, however, a Microswitch can easily be adapted to cameras which do not have built-in synchronizers. This switch will set off electronic flash units at the point when the shutter is completely open. The Microswitch, a high efficiency precision switch which you can buy in almost any electrical supply house, is mounted on the camera. It makes an electrical contact when the cocking lever of the shutter goes past a spring on the switch. The switch illustrated

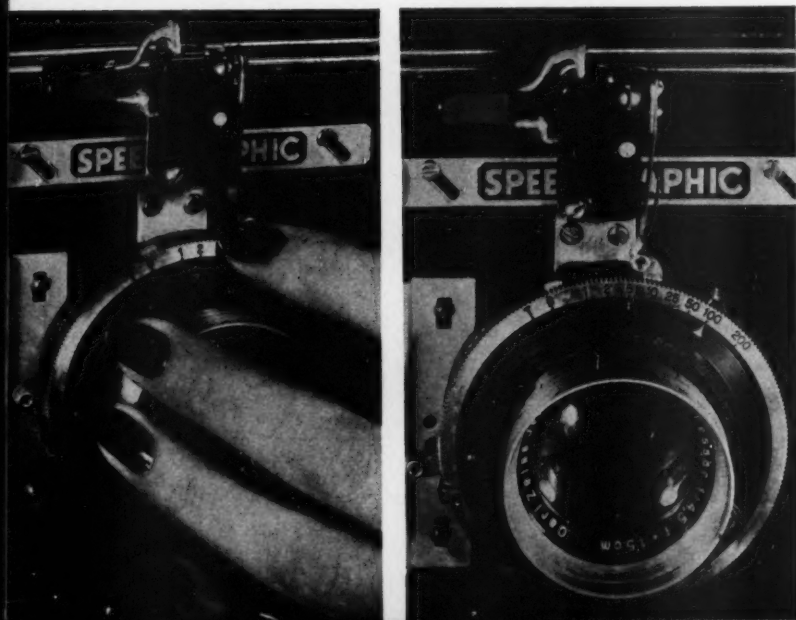
in Figure 1 is mounted on a Speed Graphic camera and is used with a Compur shutter.

The price of the switch is \$.90 and the only other parts needed are screws and springs shown in Fig. 5. The parts can be made or bought for a few pennies, making the total cost not much over a dollar. These parts are as follows;

- 1 V3 Microswitch
- 2 4-40 machine screws
- 2 2-56 machine screws
- 1 1" x 2" piece of 20 gage stainless steel
- 1 6" piece of .005" thickness gage stock
- 1 6" piece of .015" thickness gage stock

A bracket is made for the Microswitch and is mounted either on the camera or

FIGURE 1, left, shows the synchronizer in place and the shutter being cocked. The cocking lever slides past the release spring. FIGURE 2, right, is a self-portrait of the synchronizer in action. Notice that the cocking lever has struck the tripping spring and forced the loading spring over to make contact. The back element of the lens is visible and the lens is wide open. This synchronizer is in perfect "sync" for the speed at which it photographed itself.



the lens board. For this bracket the piece of 20 gage stainless steel is used and is cut, bent and drilled, these various steps being shown in Fig. 3.

A type V3 Microswitch is used in this case because it is small and can remain in place even when the camera is closed. The force necessary to trip this switch is somewhat high, so, to relieve the shutter of most of the load, the switch is pre-loaded. This not only protects the shutter but also preserves its accurate timing. Two pieces of flat spring steel are used adjacent to each other; a short heavy piece to pre-load the switch and a long light piece to trip it. With this combination there is enough force to trip the switch yet there is no interference or action between the switch and the cocking lever when the shutter is being cocked. The pre-load spring is short and at no time touches the cocking lever, while the tripping spring is long and flexible and touches the cocking lever as it moves in either direction. The tripping spring, however, actuates the switch only when the shutter is released.

The springs are made from thickness gage stock as this is excellent material for these parts and is easily obtainable in almost any thickness. The short pre-load spring is made from .015" stock and in its final form is  $\frac{1}{4}$ " wide and  $1\frac{5}{16}$ " long. The tripping spring is made from .005" stock and is  $\frac{1}{4}$ " wide and approximately  $1\frac{1}{2}$ " long or whatever length which will best trip the switch and slide over the cocking lever as it goes by. It is better to leave this spring longer than is needed and cut it off in place, a little at a time, until the desired precise action between the switch and shutter is obtained. The longer the spring the sooner the speed-flash will be fired. Cutting off a portion

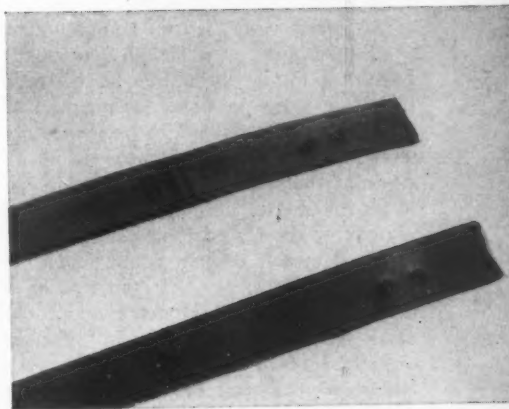
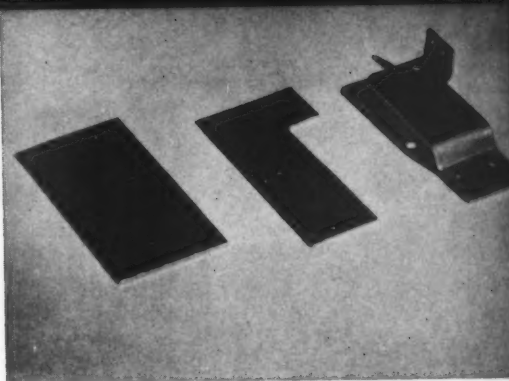
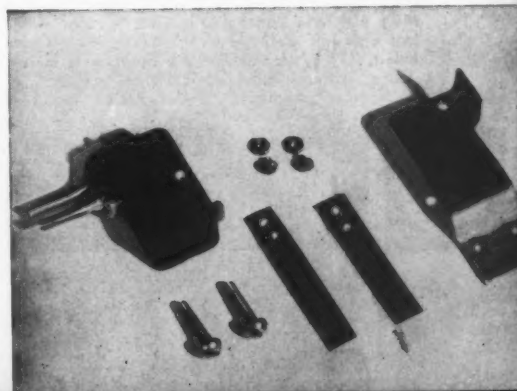


FIGURE 3, top, shows the three steps in cutting and shaping the bracket that holds the switch.

FIGURE 4, above, shows the method of center-punching and grinding the thickness gage stock before drilling the holes. This should be done before cutting to size to prevent splitting the steel.

FIGURE 5, below, is the complete parts layout after drilling and finishing, just before assembly.





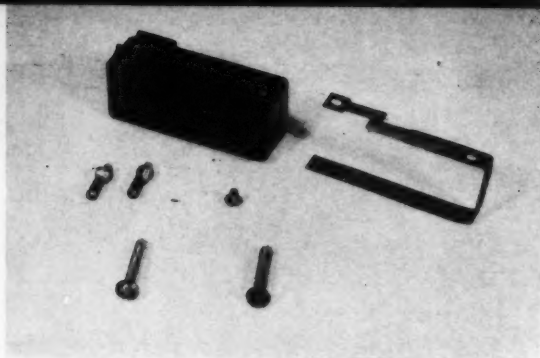


FIGURE 6 illustrates the necessary parts for the Graflex synchronizer before their final assembly.

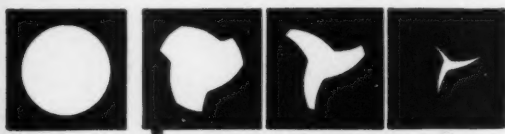
of the spring will delay the timing action.

The tripping spring should actuate the switch the instant the shutter leaves are in their fully open position. See diagram on this page. This action can be closely observed by watching the shutter while restraining the action of the cocking lever as it returns to its normal position. After reasonably good synchronization has been obtained in this manner a test should be run to make certain that the shutter is perfectly synchronized in actual operations at all speeds. Usually if it is in "sync" at one speed it is in "sync" at all other speeds but occasionally because of the flexibility of the tripping spring a slight adjustment has to be made on the initial installation. After it is once put on and synchronized it will remain so unless one of the parts breaks.

Difficulty might be experienced in drilling the spring material as it is very hard

#### CHECKING THE SYNCHRONIZER ADJUSTMENT

The Compur type shutter should be set at 1/100th sec. and the lens at its wide open aperture. Then look through the camera from the back and flash the speedlight. If you have perfect synchronization there will be a round disc of light the size of the lens opening, as shown at the left in the diagram below. Off synchronization will show up as various shutter patterns indicated in the other views. For methods of correcting synchronization, see text.



but it can be overcome by the following procedure. After the holes have been located, these points are center-punched deeply. So deeply in fact that high pimples appear on the opposite side of the material. These pimples are ground off on an abrasive wheel until holes appear in the material. See Fig. 4. These holes can then be drilled and enlarged to the proper size (No. 45 drill).

Lugs are made to fit the triggering cord connector which leads to the speedlight and are soldered to the "common" and "normally open" terminals of the switch. The "normally closed" terminal is cut off and ground down even with the outside surface of the switch.

The parts are then fitted together, assembled and mounted on the lens board of the camera and synchronized with the shutter. Electronic flash units have "zero" delay unless a delay is especially built into them; hence the need for the switch's being placed on the camera so that the contact is made the instant the shutter leaves are wide open as described before. Fig. 2 is one of the test shots taken with an electronic flash triggered with the mechanism described in this article. The cocking lever has just actuated the Microswitch and is sliding past the tripping spring on its way to its normal position. The leaves of the shutter are wide open indicating that the device is in "sync."

This attachment can be used at all shutter speeds from the lowest to the highest and since the speed of the electronic flash

is approximately  $\frac{1}{5000}$  of a second, the higher the shutter speed the less the effect of the other light around the subject will be on the film.

Most Graflex cameras can also be adapted to this type of electronic flash synchronization. On this type of camera a type Z Microswitch is fastened to the side of the camera where it can be actuated by the mirror setting lever when it flies up. This type of Microswitch is used because it is more adaptable to this camera.

First the "common" and "normally closed" terminals are connected together. Next, a piece of spring steel  $\frac{1}{4}$ " wide and approximately .025" thick is bent and fastened to the switch so that it touches the actuating button and extends up so that it actuates the switch when it is touched by the mirror setting lever. See Fig. 7. Thickness gage stock can be used for this spring also. In the installation illustrated the spring steel is used not only to trip the Microswitch but also to connect the "common" and "normally closed" terminals. This is in one piece and is shown in Fig. 6. Lugs which will fit the tripper cord are soldered to the "normally open" and "normally closed" terminal screws to accommodate the cord. The screws with lugs

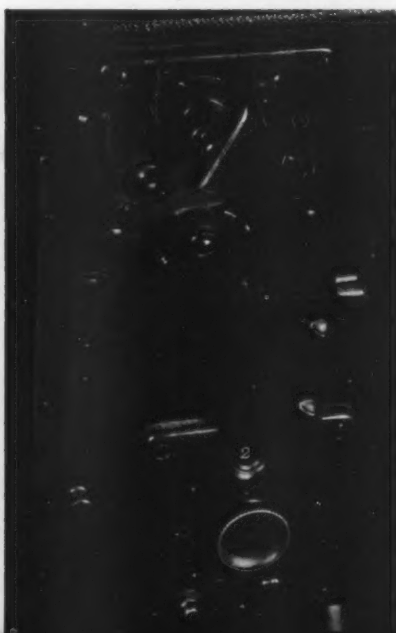
(Continued on page 111)



FIGURE 7. The synchronizer is installed on a Graflex. The actuating button is being pointed to by the lower finger.

FIGURE 8, left, shows the mirror down in viewing position. The focal plane curtain is open ready for picture taking.

FIGURE 9, right, indicates the position of the mirror as up. The contact has been made by the lever, taking the picture by speedlight illumination.



# basic

col

THE SUMMER SEASON with its bright sunlight and vivid splashes of color acts like a dash of cold water to many a hibernating amateur photographer. Much too often, however, the scene that was breathtaking in the viewfinder turns out to be dish-water hues in the transparency. For the most part, these disappointments can be avoided by checking a few basic points before the shutter is tripped.

## Basic Color Faults

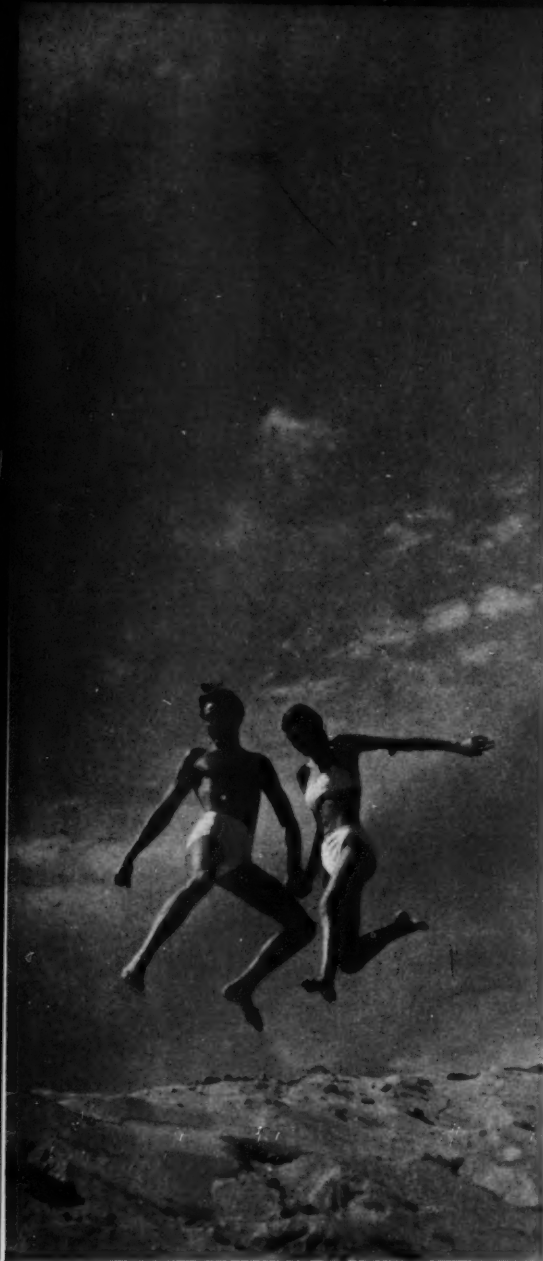
If you will permit us to ignore some of the picture taking faults common to *both* color and black-and-white photography, we will concentrate only on the major errors committed in taking color pictures. For example, we all know that in making any picture the camera should be properly focused and held steady during the exposure. We shouldn't double expose the film or use a slow shutter speed for fast action. But there are a few factors that are either unique in color work, or are much more critical than in black-and-white photography. These are the factors we will try to clarify.

## Check List of Errors

From an analysis of many thousands of amateur color transparencies processed at Pavelle Color Laboratories, we have found that four faults stand out above all others. These are listed below in the order of most frequent occurrence.

1. Incorrect exposure
2. Improper subject lighting
3. Wrong light source for type of film.
4. Incorrect use of filters

Let us discuss these separately in terms



W. Lummus

IT'S EASY to take color at the beach. The lighting is about as near perfect on a sunny day as can be expected for outside work. There is plenty of light even for color action shots, like the one shown in black and white above. The picture opposite of Judy Finlay was made with a  $2\frac{1}{4} \times 2\frac{1}{4}$  reflex camera on Ansco Color Film.

BY LLOYD VARDEN AND PETER KRUSE, PHOTOGRAPHS BY THE AUTHORS, EXCEPT AS NOTED

# color faults

Experts of Pavelle Color Incorporated  
give the key to good color pictures



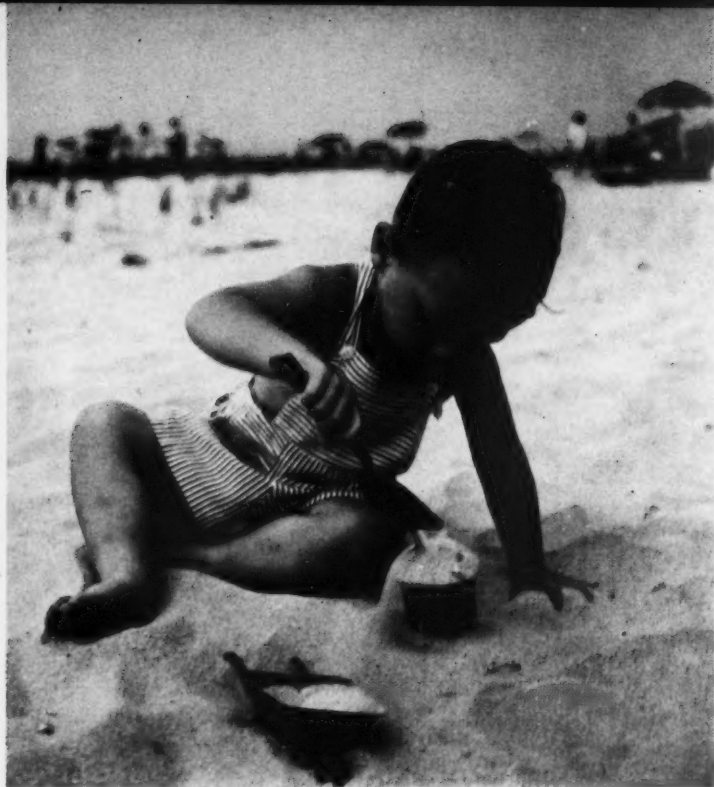


FIG. 2. The picture, below, was underexposed. This is revealed in the flesh tones which are too dark. The more underexposed a transparency is, the darker it appears to the eye.



FIG. 1. A correctly exposed transparency, left, has a full scale of tones and it is easy to see detail in the shadow areas. There are no washed out areas, and the bluish cast in the background is not objectionable. Had a yellow filter been used to eliminate the bluish haze, the flesh tones would have been too yellow.



FIG. 3. This is a typical example of an overexposed transparency. Notice how the flesh tones appear washed-out, and how the highlights lack detail. An overexposed transparency almost always has a "weak" appearance that lacks sparkle.



**EXPOSURE TABLE FOR ANSCO COLOR OR KODACHROME DAYLIGHT FILMS**  
(For Ektachrome Daylight Film Use One-half Lens Stop More Exposure)

Shutter Speed	Bright Sunlight (Clear Sky) Front Lighting	Bright Sunlight (Clear Sky) Side Lighting	Bright Sunlight (Clear Sky) Back Lighting	Hazy Sunlight Soft Shadows	Cloudy Bright No Sun No Shadows	Cloudy Dull No Sun Dark Sky
1/100 Sec.	f/4.5	f/3.5	f/2.5	f/3.5	f/2.5	f/1.8
1/50 Sec.	f/6.3	f/4.5	f/3.5	f/4.5	f/3.5	f/2.5
1/25 Sec.	f/9	f/6.3	f/4.5	f/6.3	f/4.5	f/3.5
1/10 Sec.	f/16	f/11	f/8	f/11	f/8	f/5.6

Exposures in table are for average subjects exposed under normal summer conditions in the temperate and tropical zones, from two hours after sunrise until two hours before sunset. Near sunrise or sunset use one lens stop more exposure. For dark subjects use one-half lens stop more exposure. For light subjects use one-half stop less exposure. During winter season, use one lens stop more exposure, provided there is no snow. For exceptionally bright scenes (snowscapes, seascapes, etc.) use twice the shutter speeds shown in table. If, for example, normal exposure is 1/100th sec., use 1/200th sec.

of how to minimize each as much as possible.

### Correct Color Film Exposure

There is no foolproof system for getting correct color film exposure because there are too many unavoidable variables. Anyone who claims to have such a system is either kidding himself or has been exceedingly lucky. The closest approach to an infallible method is one which calls for several exposures of each subject, one about one-half lens stop less than the calculated exposure and another about one-half lens stop more than the calculated exposure. The trouble with this system is that it is not applicable except when the subject *can* be exposed more than once. Moreover, it is wasteful to make three exposures to obtain one transparency. Even so, it is a method which has much to recommend it when it can be used.

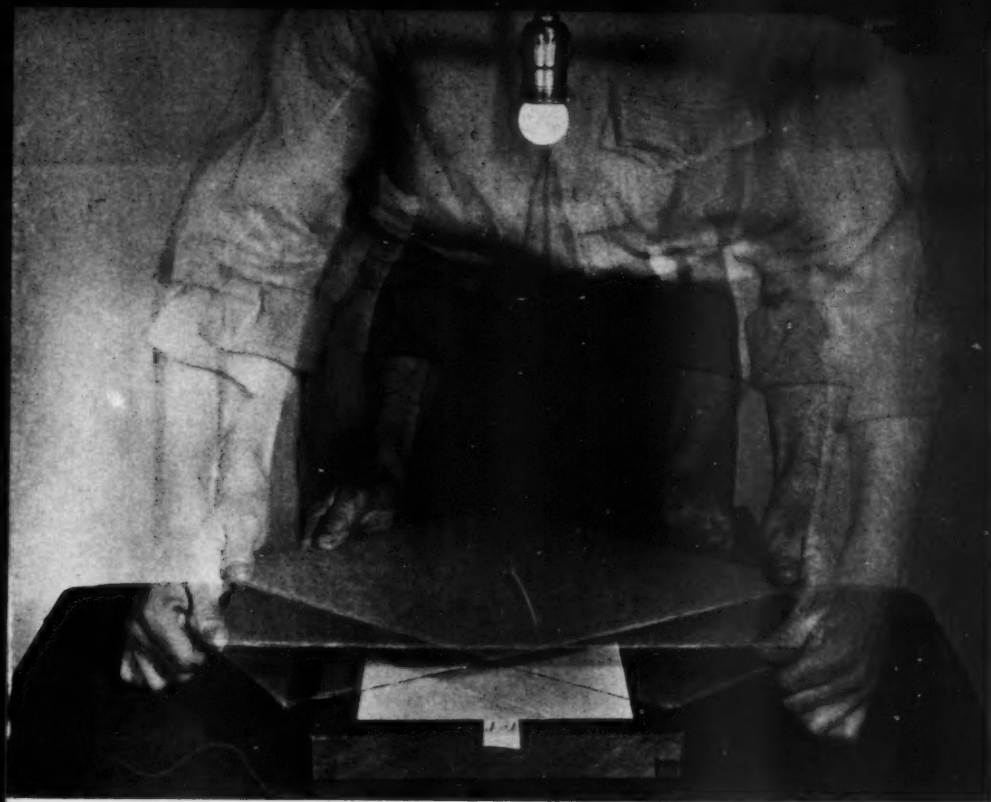
In any case, a nominal exposure has to be calculated for each set of conditions. If everything is in your favor this one exposure will be adequate. But even when no errors are committed in determining the nominal exposure, there are two variables over which you have no control. (1.) Color films vary somewhat in speed from emulsion to emulsion. According to

the manufacturers' literature, plus or minus one-half lens stop variations can be expected. (2.) Effective film speed can be varied in processing, and no better control than plus or minus one-quarter of a lens stop can be guaranteed by any color finisher. Sometimes the speed variations due to processing are even greater, and this is certainly true for Ansco Color or Ektachrome when films are not always sent to the same finisher for processing.

The situation is not as hopeless, however, as one might think. Color films have appreciably greater exposure latitude than is often accredited them—providing the lighting on the subject is not extreme in range. Assuming a suitable subject lighting, chances of success are pretty good if exposure is properly calculated. In other words, don't be too quick to junk your exposure meter or abandon any other perfectly acceptable method for determining exposure simply because of an occasional failure. Revise your system only if it consistently gives poor results.

The first essential in arriving at a suitable procedure for calculating exposure is to be able to recognize a properly exposed color transparency. It is surprising

(Continued on page 120)



## KEYED EMPHASIS

BY HAROLD ARRIGONI

HAVE you ever photographed a subject against a plain white background and then, after the print was finished, wished that the background had either been darker, or that you could have a halo effect around the head? Or perhaps in trying to obtain a graduated tone in a cloudless landscape by burning in the sky in the usual manner (See Dodging, May issue—Ed), you found that the sky looked muddy or grainy when you were finished.

If so, a simple enlarging technique called "flashing" may be the answer to your problems. Flashing is a method of purposely fogging certain areas of a print by means of an ordinary small, frosted light bulb (7½ or 10 watts) which is suspended 3 or 4 feet above the easel that holds the enlarging paper. The flashing

procedure is carried out after the print has been exposed, but *before* it is developed. Aside from the light bulb, all that is needed is a sheet of cardboard approximately twice the size of the print you intend to make.

You will save yourself time and printing paper if, before you attempt to flash in the corners of an actual photo, you make a test sheet similar to Fig. 1. To do this, place a sheet of your favorite printing paper in the easel you use for making enlargements. (This, of course, is done with only the safelight burning.) Next, lay the piece of cardboard over the sheet of printing paper and move the easel beneath the "flashing" bulb you have suspended for this purpose.

Turn on the flashing bulb and proceed to alternately draw the cardboard towards

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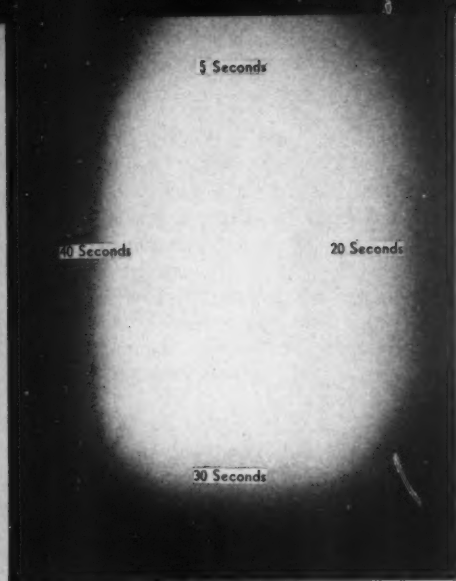


FIG. 1. Four shades of gray are obtained on a test sheet by flashing (exposing to white light) each side of a sheet of printing paper for different lengths of time. The multiple exposed picture, opposite, shows how a sheet of cardboard is moved between the flashing light and printing paper during each test exposure. One test sheet should be made for each of your favorite printing papers to serve as future guides. Photos: Harold Arrigoni

you and away from you. At the same time, draw first the right corner, then the left corner of the cardboard towards you in a sort of see-sawing motion. The multiple exposed images in the title page picture of this article illustrates these movements with much greater clarity than they can be described. The cardboard, you will note, is held two or three inches above the printing easel. Use smooth, even strokes at the rate of about two strokes to the second. After five seconds, measured either by count or by a mechanical timer, turn off the white light. (The regular darkroom light can be left burning during this entire procedure.) Mark the area of the paper you have just finished flashing so that you can identify it as having been exposed for 5 seconds.

Next, using the same technique de-

FIG. 2, below, is a straight print in which the background and the hands are so light in tone that they steal emphasis from the face. Both faults were corrected in the print at the bottom of the page by flashing. Referring to the test sheet (left) it was decided that 5 seconds of flashing would darken the hands sufficiently to contrast with the flesh tones of the face. Similarly, 30 seconds of flashing at the top, and along the sides of the picture, separated the subject from the background so as to emphasize the face.



scribed above, expose another side of the sheet of printing paper for 20 seconds. The two remaining sides, in turn, will receive correspondingly additional flashing exposures. The exact timing of the various exposures will depend upon the paper you are using; the 5, 20, 30, and 40 second exposures shown in Fig. 1 would produce far different results on either faster or slower papers, or with different flashing bulbs or greater bulb-to-paper distances. With Opal G or Indiatone papers, for instance, you can use a 10 watt bulb at a distance of four feet and obtain good results; with Kodabromide or faster papers you will want a weaker bulb or a greater bulb-to-paper distance. On extremely fast papers you may even want to cover part of the bulb with masking tape, or put a dab of paint on the underside in order to cut down its intensity so that the paper does not fog too quickly for proper control. The important thing to establish is a working combination that will give you consistent results. After developing and drying your test print in the usual way, it can then be tacked up on the darkroom wall to serve as a future flashing guide.

The "straight" print in Fig 2 has two major tonal faults: the background is so light that there is little separation between it and the subject's face, and the whiteness of the hands compete with the whiteness of the face for attention. Here is where the flashing test guide comes in handy. According to the guide, flashing the hands about 5 seconds should darken them enough to allow the face to stand out several shades whiter. So, after giving the negative its normal enlarging exposure, the hands are flashed for 5 additional seconds. Then, in order to obtain something of a spotlight effect to separate the subject from the background, the top and two sides of the picture are flashed an additional 30 seconds. This result is the effect shown in Fig. 3.

Although the area immediately around a subject's face receives less flashing than the outer sides and corners of the print (in order to graduate the tonal effect),

don't be afraid to flash a little into the face itself. You won't see it—and by slightly flashing the face you will avoid the risk of too sharp a line of demarcation. If you wish to subdue detail—such as may exist in an out of focus foreground, for instance,—print in the area deeper than you ordinarily would before flashing it. Otherwise the part that has been flashed will look gray and be lacking in quality.

The method of flashing just described is the one most commonly used—especially when time is no factor or when only one or two prints are to be made. A second method often used by professionals is particularly effective when a quantity of prints having flashed backgrounds are to be run from the same negative.

This method usually dispenses with the cardboard, and substitutes a small flashlight for the 10 watt flashing bulb. The flashlight, generally a penlight, is fitted with a paper cone which extends several inches beyond the lens and is held in place with adhesive tape. The intensity of the light is controlled by a wad of cotton placed in the open end of the cone. The thickness of the cotton determines the amount of light that comes through. After the paper has been exposed in the enlarger (or even while the negative is being projected) the corners and sides are flashed in by moving the flashlight over the areas that are to be darkened. With a little practice, penlight flashing can be done so skillfully that it is indistinguishable from flashing performed with a sheet of cardboard and a frosted light bulb.

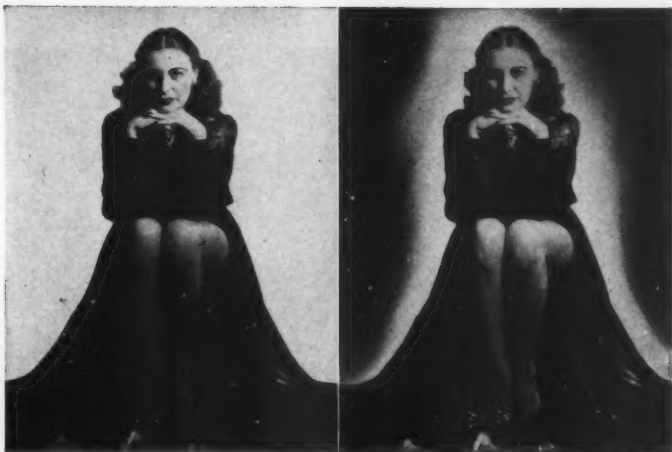
Flashing is of no value when it comes to emphasizing detail—an eye, for instance—that prints in too lightly during an exposure which is normal for the rest of the negative. The only way to print desirable details darker is to dodge them in. But in darkening sides and corners, or in darkening areas in which no further detail is wanted, flashing offers three advantages over dodging.

1. With no negative between the light source and the printing paper when flash-

(Continued on page 113)

A DISTRACTING background can be blocked out of a negative and a flashed background substituted in its place. First the subject is outlined on the negative with opaque material (see text); then the rest of the background is blocked out. A print made at this point will have a plain white background as shown above, left. To darken the tops and sides of the picture, many professionals use a pocket penlight fitted with a paper cone. If too strong a penlight is used, or if the flashing is overdone, the background will become noisy (upper right). The large picture illustrates proper use of the flashing light.

*Photos: Jack Reynard*







WERNER BISCHOF FROM THREE LIONS





STEPHEN DEUTCH

# PICTURES FOR JUNE

FLORENCE HOMOLKA

## *Young Sprouts*

UNFOLDING LEAVES, the pure, early-spring colors and kids on the beach give us all the urge to get the camera off the shelf to take some pictures. Picture-making has a great deal in common with fishing; there is always the lure of the big one we will catch next time and the perfect picture that we will make with the next roll of film. Being with nature and playing with youngsters is rewarding enough for most of us, even if the pictures aren't so sharp.



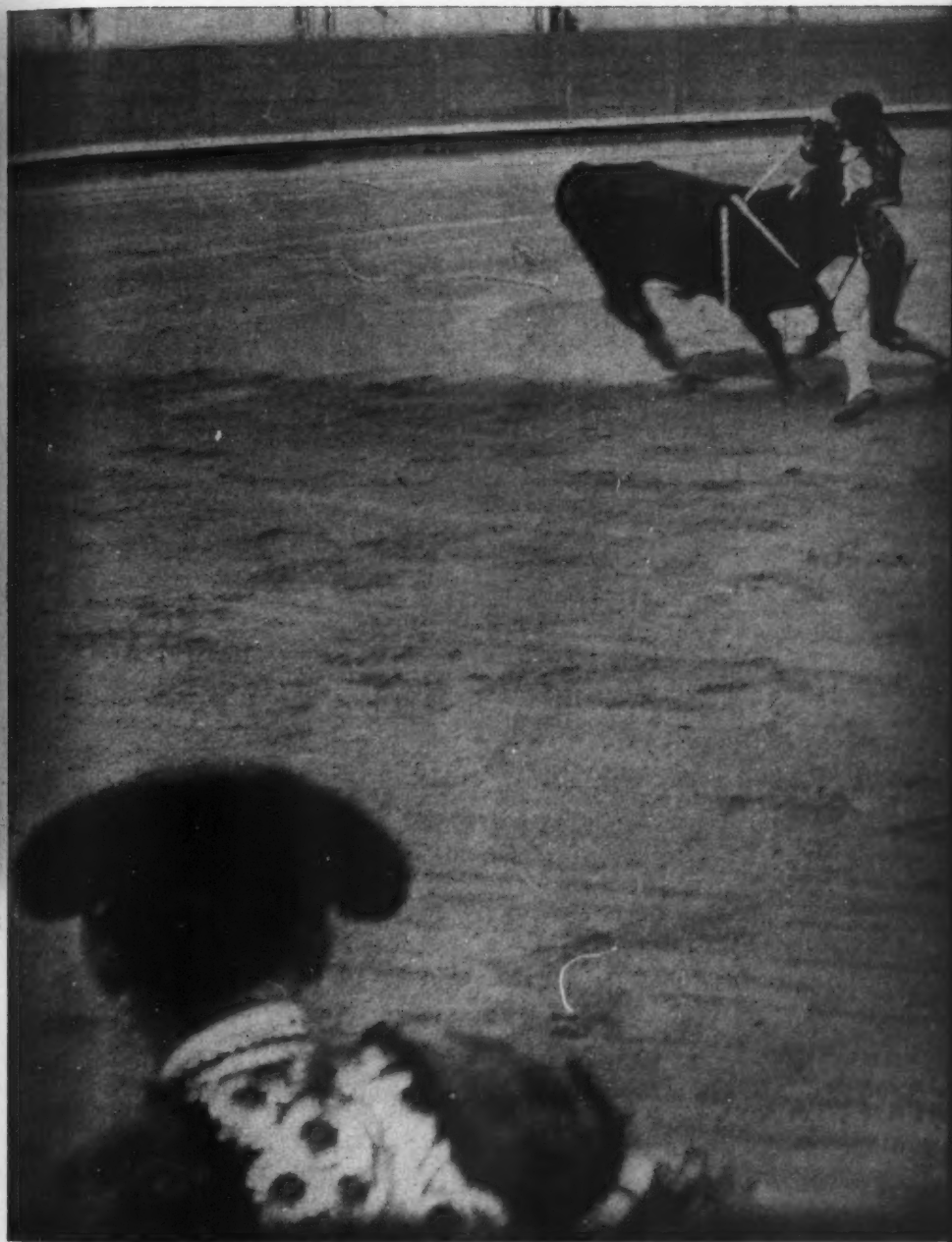


THREE MATADORS of San Sebastian, Spain, coolly and critically appraise another's footwork.

### *A Hot Sunday Afternoon*

BULLFIGHTING is a geometrically calculated science. A matador can increase his risks by the manner in which he conducts the graceful and deadly 15 minute battle with his wild animal adversary. Up to the time he enters the *plaza de toro* a bull has never fought with a man. If he had there would be fewer matadors. Before the 16th century bulls were allowed to be fought in various rings on succeeding Sundays. So many matadors were killed that in 1567 Pope Pius the Fifth issued an edict denying Christian burial to any man killed in the ring. He relaxed his edict on the condition that bulls would be fought only once.

Every Sunday in the hot, sun-drenched cities of Spain, Mexico and Peru the *gentes* walk and ride to the ring to watch the colorful, and to most foreigners unexplainably barbaric, spectacle of killing or being killed, in a dusty sand ring.



A BANDERILLERO at San Sebastian placing his second pair. He lets the bull's horn come so close it will rip the gold embroidery from his jacket. For these pictures showing the matadors at ease and at work C. C. Seghers, Jr., used a Rolleiflex, and made his photos without being seen. Matadors have superstitions about being photographed before a fight, and portraits must be "as is."



ROBERT KOHL

JOH

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JOHN DOMINUS

## *Theme and Variations*

WITH mallet and chisel, charcoal and brush, and now with the photographic lens, artists have recorded the beauty of the human figure. Their standard has been a will-o-the-wisp, a piece of marble by an unknown Greek sculptor. We know it today only as "Venus of Melos." She was found on the island of Melos by a Greek peasant in 1820 after having been hidden in a cave since the first century B.C. Until the perfect figure comes along though, the photographer has his problems, for the camera records only what it sees; there is no improvisation on the theme as is possible with other mediums.

ANDRE DE DIENES



## *Poetry of Motion*

ONCE, when he was in a German prison camp, Andre Kertesz made a series of graceful swan pictures, Conde Nast saw them; that's how Kertesz happened to come to America. Gene Idaka saw swans too; in his photographic interpretation of Tschaikovsky's "Swan Lake" he allowed a gentle motion to show in his exposure.

ANDRE KERTESZ



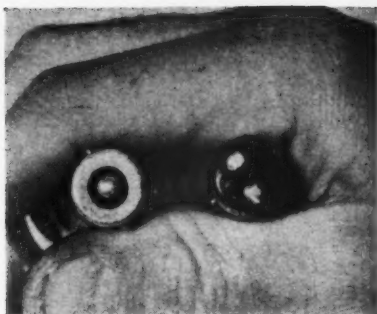
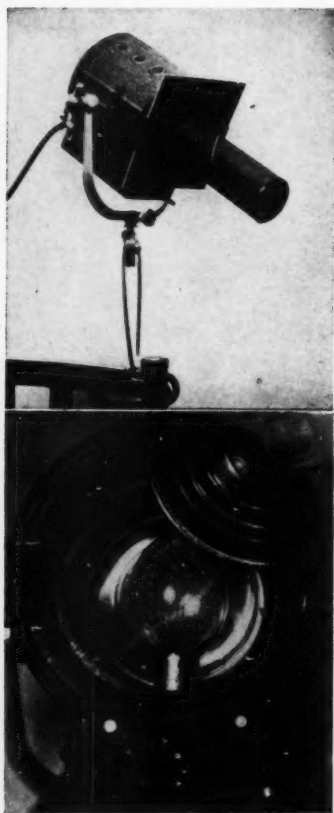


GENE IDAKA



# HOW TO CONVERT SPOTLIGHTS FOR FLASH

BY I. G. EDMONDS



A SIMPLE modification will make it possible to use peanut flash bulbs in 100 or 150 watt spotlights of the Baby FR and Dinkie Inkie class. When thus converted and provided with a spring clamp base of the type used on ordinary clamp-on reflectors, a spot's ability to focus from four to forty-four degrees, its compact size, and its provision for use of snoots and barndoors make it a versatile extension unit for the flash gun. For use, the spot is plugged into the gun's extension outlet and fired in synchronization with the other bulbs.

The method of modification will depend upon the type of base used on the projection bulbs, and the position of the reflector in the spotlight you use. The Dinkie Inkie has been selected for this demonstration because it is a typical spotlight and is one of the easiest to modify. This light uses a bayonet base projection lamp whose receptacle takes a number five peanut bulb perfectly. It is not necessary to reposition the reflector with the change in lamps. The electrical contacts in the spotlight socket are the only features that prevent an interchange without modification. Flash bulbs have a single contact, while a spotlight's electrical outlet has twin contacts. Although the receptacle will accept the flash bulb for a snug fit, the bulb will not make contact with the circuit.

A permanent modification can be achieved by rewiring and changing the contacts in the receptacle. This is not difficult, but such remodeling will make

A COMPARISON of the bases of the flashbulb and projection bulb (left) illustrates the difference in contacts and shows why a conversion disk is required when flashbulbs are to be used in baby spotlights. Lower left, a spotlight equipped with a spring clamp base and a snoot directs the light from a flashbulb in a controlled beam. With the Fresnel lens removed, a peanut flashbulb is shown centered in front of the reflector in a baby spotlight. Contrast with the bulb illustrates the diminutive size of the spotlight. Below, the lighting effect for this picture was first determined by holding a flashlight in front of the spotlight's Fresnel lens. A cardboard reflector "bounced" enough light into the shadow side of the face to keep the shadows translucent. Otherwise, shadows would become black.

*Photo: Jimmy Brown*



it impossible to use the regular lamp again for preliminary focusing, studying lighting effects, or with regular alternating current. A more satisfactory method is to construct a small conversion disk that can be slipped into the receptacle before inserting the flash bulb. Since no work is required on the spot itself, removing the disk leaves the light in its original condition.

Figure 1 shows the construction of the disk and the method by which it brings the electrical current through the twin contact system into the single contact bulb. In addition to bringing the juice to the flash bulb, the disk also insulates the second terminal away from the flashbulb, and grounds it to the side of the socket.

To make the union disk, cut a round piece of any rigid material that is a non-conductor. Its diameter will be such that it can be inserted snugly into the receptacle. Its thickness should be sufficient

only to keep the material from cracking under the combined strain of the bulb and the spring positioned contact points. Too thick a material will not allow the contact points to depress sufficiently to lock the flash bulb in the bayonet mount.

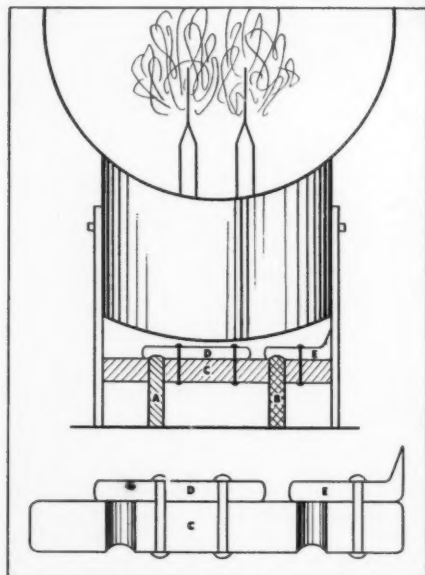
Two small holes should be bored through the insulator so that they fit snugly over the spot's two contacts. Across the top of the insulating material brad a strip of conducting metal so that it covers one of the holes and extends to the center where it can contact the base of the flash bulb. This metal strip should not extend to the edge of the insulating material, because if it touches the edge of the receptacle it will cause short circuiting. A similar strip should be bradded to the insulator to make contact with the second terminal, but this conductor must not come in contact with the flash bulb. It is extended to ground against the side of the socket so as to allow the battery current to enter through one terminal, pass through the metal strip, and contact the base of the flash bulb. The current then passes through the electrodes of the lamp, igniting the primer, and is grounded against the socket where it passes through the ground and the second terminal (marked B in the diagram) to complete the circuit.

When the disk is inserted as shown in the diagram, it will fire a flash bulb in the spot as an extension unit for the flash gun at the same time the gun bulb is fired.

Spotlights that use other types of bulbs can be modified by removing the socket and replacing it with a bayonet type that will accept ordinary flash bulbs. In the event that such a socket is unavailable, you can make your own by cutting down a midget bulb adapter of the type furnished for use in regular guns. These cost about fifty cents. In doing this, it will sometimes be necessary to change the position of the spot's reflector. Exact procedure, of course, must vary with different types of lights.

Practically any baby spot can be made to take flash bulbs, but in buying one spe-

FIG. 1. Battery current enters through lead A, and is routed through the conducting metal strip D, to the base of the flashbulb. The second lead, B, is grounded to the socket by metal strip E. The strips of metal are fastened to the insulating material C, by means of tiny brads.



(Continued on page 117)

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Cedar Waxwing

IT is a pleasure to share with you these enchanting bird studies made on Kodachrome Film by Eliot Porter . . . You yourself will find an excursion into color an exciting, satisfying experience. Try it —anywhere, any time. You'll be delighted with what you get.

Kodak color includes Kodachrome Film for most miniature, sheet-film, and home-movie cameras . . . Kodacolor Film for most roll-film cameras . . . Kodak Ektachrome Film for processing in your own darkroom.

*Information on bird photography available on request*

## It's Kodak for Color



Yellow Warbler



Downy Woodpecker

# Kodak

# BULLETINS

## NEWS OF KODAK PLANS AND PRODUCTS

### *get set for the season*

BY all the tokens, summer of 1949 should be one of the best picture seasons in many years. Judicious camera fans are now taking stock—re-examining their equipment, obtaining necessary repairs and adjustments, replacing items that are outmoded.

Just as homes need spring cleaning, so do most cameras. The inside of the bellows, and back of the lens, should be dusted periodically with a soft brush. You can do it yourself—or, bet-

#### **See Your Kodak Dealer**

KODAK products are sold through Kodak dealers, any of whom will be glad to complete the descriptions of Kodak products which are mentioned in these pages. And in matters of general photographic information your Kodak dealer will be found to be soundly informed.

ter, take the camera to your Kodak dealer for a general checkup and cleaning.

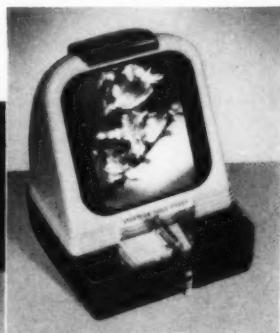
### *invisible values*

THE true values in photo equipment are, so often, things you cannot see.

You never see, for example, the Kodak Ektalite Field Lens that more than doubles the brilliance of the ground-glass image in your Kodak Reflex II Camera... or that smooths out the illumination of your Kodak Table Viewer—eliminating "hot spot" and

edge loss. You never see the rugged, die-cast body of the Reflex II—the sturdy, precise foundation that contributes so much to the long-term performance of this fine camera.

But you can see, on each article, the Kodak name—your guarantee of invisible values beneath each bright exterior.

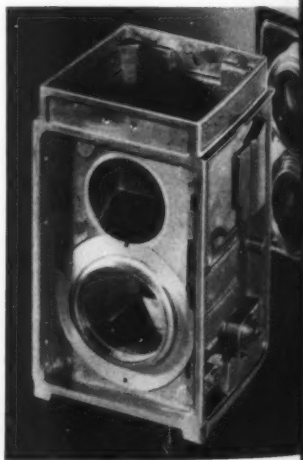


At left, a Kodak Ektalite Field Lens, as used in the Kodak Table Viewer (above) and the Kodak Reflex II Camera. This unique flat lens assures brilliant, uniformly illuminated screen images when Kodachrome transparencies are shown in the viewer. It more than doubles the brilliance of the camera's ground-glass viewing image.

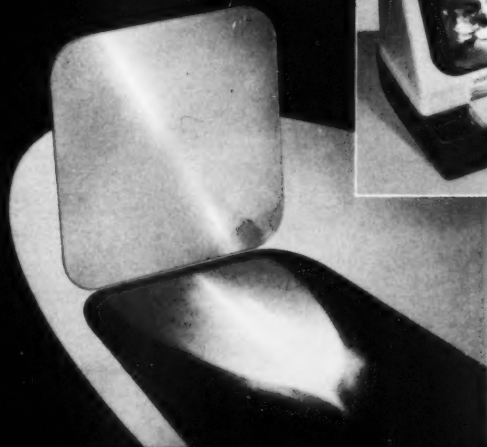
Accessories always rate a pre-season inventory. Chances are that gaps exist in your filter kit... or that supplementary lenses could greatly broaden your picture-taking scope at ridiculously small cost. If you work in color, with a miniature camera, a set of Kodak Portra Lenses (see facing page) will do more for you than almost any other item.

Cable releases should be used more than they are; if your old cloth-bound release is broken-backed or frayed out, now's the time to replace it with a Kodak Metal Cable Release. A pocket-size camera support such as the Kodapod (see facing page) should be in every camera kit.

Many camera fans try to get by without a camera case—to the detriment of a fine camera. It's unwise practice. There's at least one well-made Kodak case for every Kodak camera—and they classify as low-cost insurance policies, protecting your camera against bumps and bangs.



Above, the accurate, die-cast shell of tough, lightweight alloy that is the foundation of the popular, twin-lens Kodak Reflex II Camera.



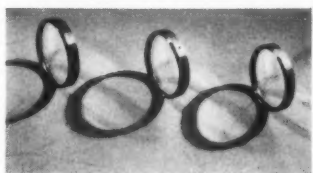


## wise cameras wear glasses— how about yours?

READING GLASSES for close work  
... sunglasses for scenics ... a sun-  
bonnet to ward off glare ... you'll  
find all these in Kodak Combination  
Lens Attachments.

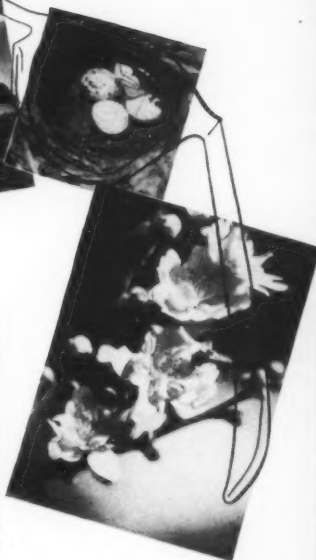
SUMMERTIME spells Kodak Porta  
Lenses for the knowing camera  
operator. A kit of these small aids  
(see at right) changes wistful  
longing to satisfying achievement  
... enables the photographer to  
move in at will, and frame the  
precise fragment of nature he  
wants, even if it's a subject only  
7 inches wide.

Kodak Wratten Filters offer—  
for any type of camera—the widest  
choice of color filter varieties  
... filters for outdoor and indoor  
use, for dramatic contrast effects,  
haze cutting, portraiture, infrared  
work, copying from colored  
originals, commercial and scientific  
photography ... and, for the  
color-film user, special color-



### 10 inches ... to infinity

Kodak Porta Lenses 1+, 2+, and  
3+, used with your camera's focusing,  
give you command of subjects  
from infinity down to a mere  
10 inches from the camera!



Kodak Wratten Filters for  
scenics ... a Kodak Lens Hood  
for sidelighted or backlit  
subjects ... Kodak Porta  
Lenses for small subjects.

correcting or light-balancing filters.  
Only a few of the dozens of  
types are required to cover most

amateur photographic needs—  
but several (see below) are basic  
to fine work.



Kodak filters, supplementary lenses,  
adapter rings, and lens hoods in each  
Kodak Combination Lens Attachment  
Series team up to meet each  
picture problem you encounter.

### these filters provide a basic kit

**For Black-and-White:** Kodak  
Wratten Filters K-2, for normal  
outdoor work ... G, for  
haze cutting ... A, for dramatic  
dark skies with panchromatic  
and infrared films ...  
X-1, for outdoor portraiture.

**For Color:** The Kodak Polarizing  
Screen, to deepen a blue sky  
without affecting other colors  
... the Kodachrome Type A  
Filter for Daylight, to permit  
daylight shots on Kodachrome  
Film, Type A.

### steady, there!

ONLY unblurred pictures are  
good ... and your hand is never  
as steady as a well-made mechanical  
camera support. When  
time and situation permit, use  
one of these aids.

The 25-ounce Kodak  
Metal Tripod No. 2 (below)  
folds to 13½ inches, but extends to  
49½. Add a Kodak Tilt-a-Pod (not shown)  
for steady support at any  
camera angle.



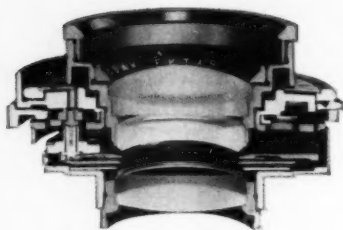
The pocket-sized  
Kodapod (left) is a  
handy outdoor support;  
its toothed jaws  
clamp on almost  
anything



# Kodak



*Valentino Sarra*



**FOR THE AMATEUR**—Kodak Ektar Lens 100mm. *f*/3.5. Finest lens in the  $2\frac{3}{4}$  x  $3\frac{3}{4}$  field; regularly supplied with Kodak Medalist II Camera. For complete information on Kodak Ektar Lenses for still cameras, motion-picture cameras, and enlargers, see your Kodak dealer . . . Eastman Kodak Company, Rochester 4, N. Y.

## **SARRA** pays his respects to Kodak Ektar Lenses

"MY FIRST KODAK EKTAR LENS, a 14-inch *f*/6.3, disappeared during the war, and I was really lost until I got a new one . . . I also have an 8½-inch *f*/6.3. I find color quality is truer in both Kodachrome transparencies and direct color separations. What's more, I get wonderful definition in my black-and-whites.

"As far as I'm concerned, Kodak Ektar Lenses are great lenses—the best made in this country or any other."

*"Kodak" is a trade-mark*

# Kodak

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# What projector should I buy?

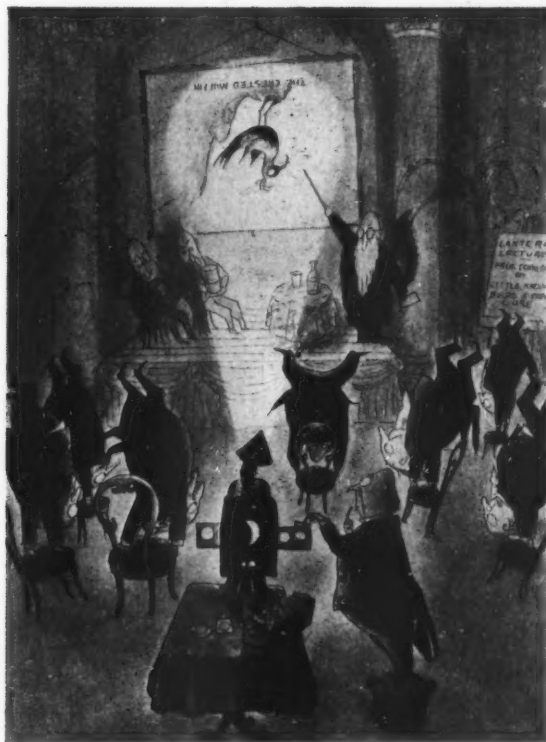
by ELI WILLIS

SELECTING A PROJECTOR is like buying a new camera—the important thing is to choose a projector according to your own individual, personalized needs. If you want a projector only for family use, a large projection image is not necessary or even desirable. On the other hand, if you intend projecting films for large audiences and need a large screen image, then you should investigate the more “de-luxe” projectors.

Similarly, such factors as portability, simplicity of operation, workmanship,

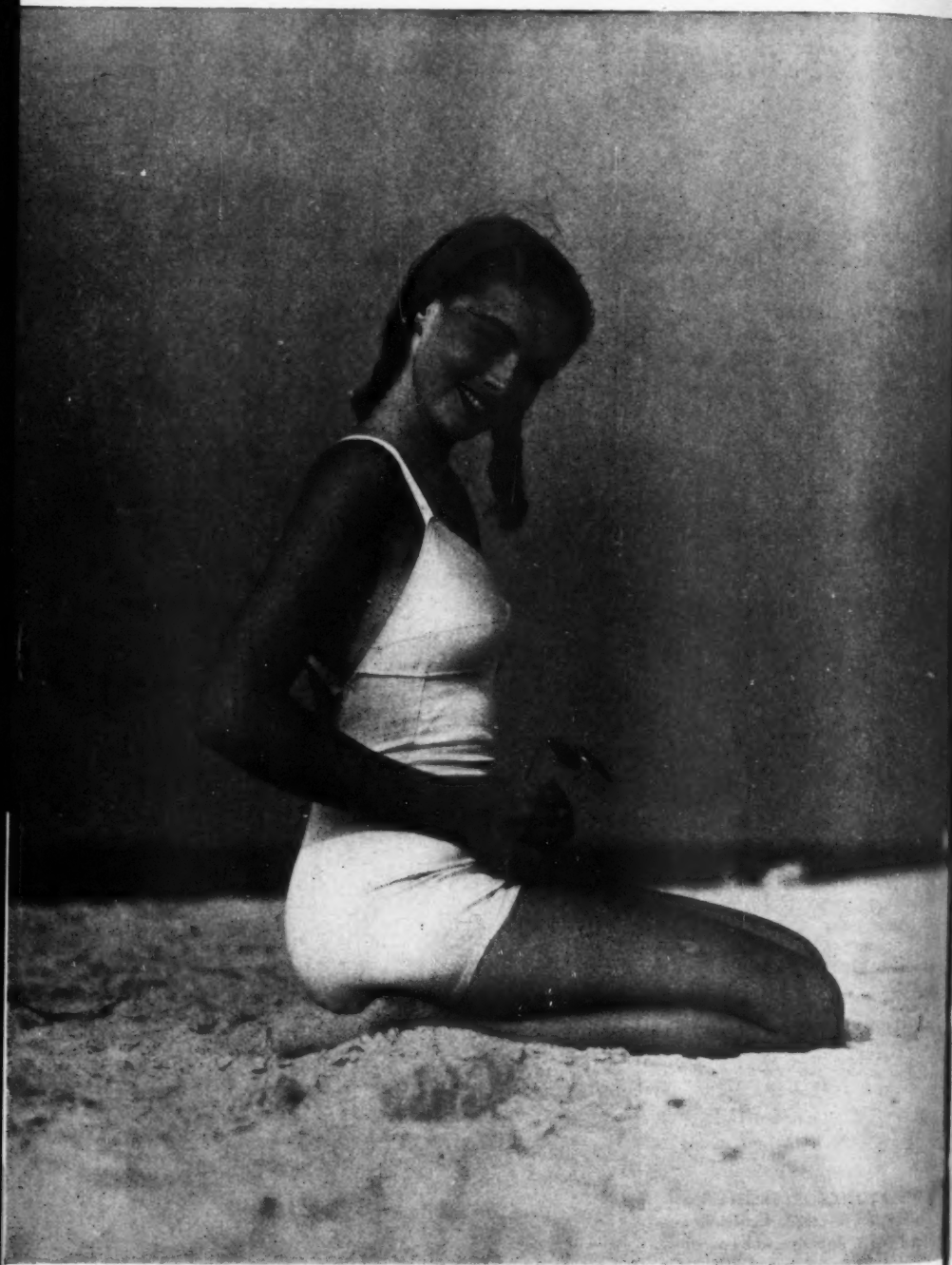
etc., should all be considered. Of especial importance are the mechanical features that make your projector a more versatile instrument. These aspects will decide whether the projector is what you want and whether it offers the most within your price range. Prices, of course, are a big consideration, but within the various types of projectors there is a wide enough price range to fit most people's wishes as well as their pocketbooks.

As a guide in helping you select a projector that matches your requirements,



THE PROJECTOR PROBLEM as seen by the British Cartoonist, Rowland Emmett. Reproduced by permission of the Proprietors of PUNCH.

VACATION color will take on new life and brilliance when it's projected. Photo: Andre De Dienes.



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## PROJECTED PICTURE SIZES FOR COLOR SLIDES

In slide projection, the size of the screen image is governed by the distance between the projector and the screen, and the focal length of the lens used on the projector. This table shows the size of the screen image at given distances and with given focal length lenses, using the popular miniature film slide or glass slide pictures measuring  $1 \times 1\frac{1}{2}$  inches. The following figures show screen image sizes when the slides are horizontal. The proportions are merely reversed when the slides are vertical.

Distance in feet from projector to screen		10'	15'	20'	25'	30'	35'	40'	45'	50'
Dimensions of screen image in feet with . . . 3" lens	Height	3.0	4.5	6.0	7.6	9.1	10.5	12.1	13.6	14.9
	Width	4.6	6.8	9.0	11.4	13.6	15.8	18.2	20.4	22.4
Dimensions of screen image in feet with . . . 4" lens	Height	2.3	3.4	4.5	5.8	6.8	7.9	9.1	10.2	11.2
	Width	3.4	5.0	6.8	8.8	10.2	11.8	13.6	15.2	16.8
Dimensions of screen image in feet with . . . 5" lens	Height	1.8	2.7	3.6	4.6	5.4	6.4	7.3	8.2	9.0
	Width	2.6	4.0	5.4	7.0	8.0	9.6	11.0	12.4	13.6
Dimensions of screen image in feet with . . . 6" lens	Height	1.5	2.3	3.0	3.8	4.5	5.3	6.1	6.8	7.5
	Width	2.2	3.4	4.6	5.8	6.8	8.0	9.2	10.2	11.5
Dimensions of screen image in feet with . . . 7" lens	Height	1.3	1.9	2.6	3.3	3.9	4.5	5.2	5.8	6.4
	Width	1.9	2.9	3.9	4.9	5.9	6.8	7.8	8.7	9.6

*Courtesy of Bell & Howell Company*

let's look at the various equipment on the market today. Part I of this survey will deal only with slide projectors. Next month, in Part II, we'll go into silent and sound movie projectors.

While slide projectors of one form or another have always been popular, the development of natural color film is mainly responsible for their widespread home use today. Since color prints are still comparatively expensive, the most satisfactory and economical way of viewing color transparencies is by projection.

Before detailing the various slide projectors available, let's first discuss their operation and construction.

When a piece of film with a positive image is placed between a lamp and a lens in a darkened room, the light from the lamp projects through the darks and lights of the film image so that the image is reproduced on a screen in front of the lens. Since the image is inverted when it passes through the lens, in order for it to fall right-side-up on the screen, the film must be placed in the projector upside-down.

Basically, a projector consists of a lamp, an optical system (including lens,

lamp reflector and condensers), and means for holding the negative in position between the lamp and lens.

Every projector today is engineered around a specific type of lamp. The manufacturer specifies the type to be used and only that kind should be installed. Some projectors are designed to handle lamps of different wattages. These often have a lamp adjusting screw for centering the various size bulbs so that an even illumination will be thrown over the entire film image. Generally, projectors of 300 watts and under are designed for medium or small audiences, while projectors using higher wattage bulbs fall in the auditorium class.

Image throw, the distance from the projector to the screen, is an important point in selecting a projector to meet your individual needs. On this depends maximum screen image size, as well as the size of your audience. While lamp wattage largely determines screen illumination, and hence the limits of "image throw," other factors are also involved. In the last analysis, it is the amount of light leaving the projector lens—depen-

*(Text continued on page 109)  
Catalogue Section Follows*



## PART I. SLIDE PROJECTORS ON THE MARKET

This survey resulted from a query of more than sixty manufacturers, and with the exclusion of special projectors, such as opaque and overhead models, it includes all projectors on which information was obtainable. The prices quoted are as of March 15 and are subject to change. Part II of the survey, covering 8mm and 16mm movie projectors, will appear next month.

American Masterpieces  
7121 Pine Avenue  
Bell, California  
**PROJECTO-MASTER**



16mm double frame filmstrip; 110 V, AC or DC; convection cooled.

Price: \$17.95. Scenic views and travel subjects in 17 frame color filmstrips available.

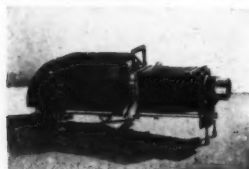
American Optical Company  
Buffalo 15, New York  
**SPENCER DELINEASCOPE "MC"**



2x2" slides, 35mm single or double frame filmstrip; 110 V, AC or DC; 300 W lamp, blower cooled; 2-element condenser system; 5" F:3.8 coated lens; helical focusing; 2-place sliding carrier; rotating front.

Price: \$98.50; case, \$12.00 extra. 3 1/2" and 7" lenses also available.

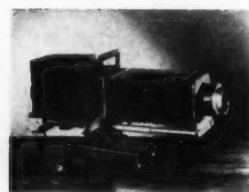
**SPENCER DELINEASCOPE "6K"**



2x2" slides; 110 V, AC or DC; 750 W lamp; blower cooled; 4-element condenser system; 6 1/2" F:2.7 lens; rack-and-pinion focusing; 2-place sliding carrier.

Price, with case: \$217.50. Attachments include: deluxe case; iris diaphragm; slidefilm adapter; condensers and carrier for 3 1/4x4" slides; lenses from 3" to 24". Also available are 16" and 20" high speed (F:4.6 and F:5.6, respectively) coated lenses.

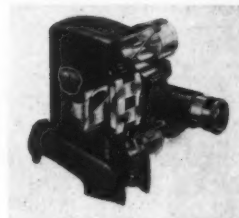
**SPENCER DELINEASCOPE "D"**



3 1/4x4" slides; 110 V, AC or DC; 500 W bulb, vent cooled; condenser system; 12" F:5.1 lens; spiral focusing; 2-place sliding carrier.

Price, with case: \$96.00. Attachments include: 2x2" slide carrier; slidefilm and microslide adapter; other slide carriers; iris diaphragm; lenses from 3" to 20".

Ampro Corporation  
2835 North Western Ave.  
Chicago 18, Illinois  
**AMPROSLIDE "30-D"**



2x2" slides, 35mm single frame filmstrip; 110 V, AC or DC; 300 W bulb, convection cooled; 2-element condenser system; 5" F:3.5 anastigmat coated lens; focusing knob; snap-action 2-place slide changer; sprocket film advance and reverse.

Price, with case: \$92.00. 3", 4" and 7" lenses also available.

**AMPROSLIDE "30-A"**

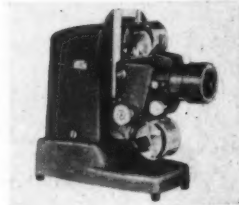
2x2" slides only; other features similar to Model 30-D.

Price, with case: \$59.50.

Argus, Incorporated  
Ann Arbor, Michigan

**ARGUS "PA-300"**

2x2" slides, 35mm single or double frame filmstrip; 110 V, AC or DC; 300 W lamp, con-





vection cooled; triple condensers; 5" F:3.5 anastigmat coated lens; friction knob focusing; 2-place rotary carrier.

Price, with case: \$75.00

## ARGUS "PA-200"



2x2" slides; 110 or 32 V, AC or DC; 200 W lamp, vent cooled; condenser system; 4" F:3.5 anastigmat coated lens; sliding focusing; 2-place rotary carrier.

Price, with case: \$36.95. 35mm filmstrip attachment available.

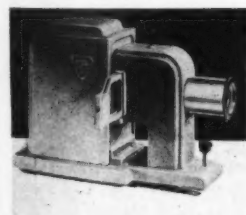
## ARGUS "PA-100"

2x2" slides; features similar to Model PA-200, but has 100 W lamp.

Price, with case: \$31.85. 35mm filmstrip attachment available.

Bausch & Lomb Optical Company  
Rochester 2, New York

## B & L 2x2" PROJECTOR



2x2" slides; 110 V, AC or DC; 150 W lamp, vent cooled; 3-element condenser system; 5" F:3.8 lens; 2-place sliding carrier.

Price: \$58.00; case, \$11.00 extra.

## BALOPTICAN "BDT"

3/4x4" slides; 110 V, AC or DC; 500 W bulb, vent cooled; double condensers; 6" lens; rack-and-pinion focusing; 2-



place sliding carrier.

Price, with case: \$87.00. Attachments include: 35mm filmstrip adapter; cooling fan; other size carriers; lenses from 4" to 25 1/4".

## BALOPTICAN "B"

3/4x4" slides; similar to Model BDT, but without the adjustable tilting base.

Price, with case: \$80.00. Attachments same as for Model BDT.

Bell & Howell Company  
7100 McCormick Road  
Chicago 46, Illinois

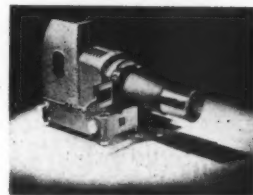
## FILMO SLIDE MASTER



2x2" slides; 110 V, AC or DC; 500, 750 or 1000 W lamp, blower cooled; 3-element condenser system; 5" F:3.5 coated lens; rack-and-pinion focusing; 2-place sliding carrier.

Price, with case: \$285.00. 3 1/2" and 7 1/2" lenses also available.

## FILMO DUO-MASTER



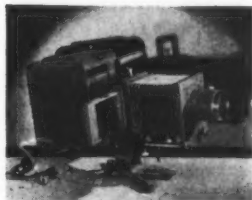
2x2" slides; 110 V, AC or

DC; 300 W lamp, convection cooled; 3-element condenser system; 5" F:3.5 coated lens; helical focusing; 2-place sliding carrier.

Price, with case: \$130.00. 3 1/2" and 7 1/2" lenses also available.

Charles Beseler Company  
60 Badger Avenue  
Newark 8, New Jersey

## BESELER MODEL "C"



3/4x4" slides; 110 V, AC or DC; 500 W bulb, vent cooled; condenser system; 12" lens; spiral focusing; 2-place sliding carrier.

Price, with case: \$96.00. 35mm filmstrip and 2x2" slide adapter; 5" to 15" lenses available.

## BESELER GASOLINE PROJECTOR



3/4x4" slides; gasoline-kerosene Coleman mantle lamp. Projection distances up to 20 feet.

Price: \$86.00. Filmstrip and 2x2" slide adapter available.

Best Devices Co., Inc.  
10516 Western Avenue  
Cleveland 11, Ohio

## BESTEREOPTICAN "H-1000"



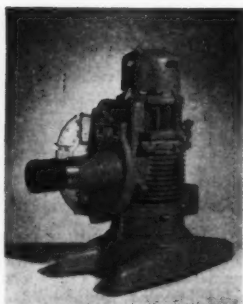
## MINICAM SURVEY

3/4x4" slides; 110 V, AC or DC; 1000 W bulb, convection cooled; bi-convex lens (6" to 36" focal lengths available); sliding carrier.

Price: \$49.50. 500 W and 1500 W models also available.

Oscar F. Carlson Co.  
2600 W. Irving Park Road  
Chicago 18, Illinois

ROTO-DIAL "500"



2x2" slides; 110 V, AC or DC; 500, 750 or 1000 W lamp, blower cooled; 3-element coated condenser system; 5" F:3.5 coated lens; 4-place rotary carrier.

Price, with case: \$165.00.

Diamant Products Company  
41 West 24th Street  
New York 10, New York

DIAMANT MASTER "D-1"



2 1/4x2 1/4" and 2x2" slides; 110 V, AC or DC; 150 W lamp, vent cooled; condenser system; 8" F:4.5 coated lens; 2-place sliding carrier.

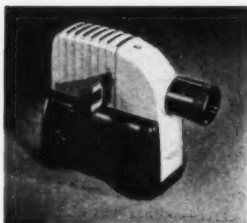
Price: \$59.50; case, \$10.95 extra.

Eastman Kodak Company  
Rochester, New York

KODASLIDE MASTER MODEL

2x2" slides; 110 V; 1000 W

## SLIDE PROJECTORS



lamp (or lower wattage), blower cooled; adjustable condensers; 5" F:3.5 coated lens—other Projection Ektar and Ektanon lenses from 5" to 11"—rack-and-pinion focusing; 2-place sliding carrier.

Price, with case, depending on lens: \$181.00 to \$295.00.

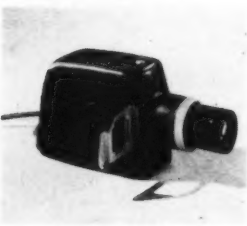
KODASLIDE MODEL "2A"



2x2" slides; 110 V, AC or DC; 150 W bulb, convection cooled; condenser system; 5" F:3.5 coated lens; sliding focusing; 2-place sliding carrier.

Price: \$47.50; case, \$15.00 extra. Kodaslide changer, dissolve control outfit, 7 1/2" Projection Ektanon lens also available.

KODASLIDE MODEL "1A"



2x2" slides; 110 V, AC or DC; 150 W bulb, convection cooled; 4" F:3.5 coated lens; sliding focusing; 2-place sliding carrier.

Price: \$27.50; case \$10.00 extra. Kodaslide changer available as accessory.

KODASLIDE TABLE VIEWER



2x2" slides; 110 V, AC or DC; convection cooled; double condensers; 3-front surfaced mirrors; Ektalite Field Lens; 2" F:3.5 Projection Ektanon Lens; focusing lever; semi-automatic changer, capacity 75 ready-mounts or 30 glass slides.

Price: \$95.00.

Emde Products, Inc.  
4031 Elenda Street  
Culver City, California  
EMDE PROJECTOR



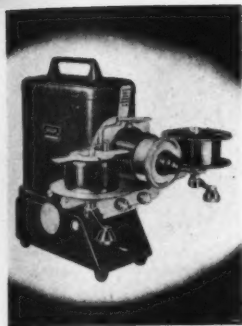
3/4x4" slides; 110 V, AC or DC; 150 or 200 W lamp, convection cooled; 3-element condenser system; 5" F:3.5 coated lens; spiral focusing; sliding carrier.

Price: \$89.50; case, \$13.75 extra. 6 1/2" lens and adapter for 2x2" slides also available.

Federal Mfg. & Eng. Corp.  
199-217 Steuben Street  
Brooklyn 5, New York  
FEDERAL MICROFILM  
PROJECTOR "701"

35mm single and double frame filmstrip and 100' reels, adapter for 16mm; 110 V, AC or DC; 150 or 200 W lamp.

## MINICAM SURVEY



vent cooled; condenser system; 65mm F:6.3 anastigmat lens; spiral focusing; 360° rotation of projector head.

Price: \$95.00. Case available.

G-M Laboratories, Inc.  
4300 North Knox Avenue  
Chicago 41, Illinois

SKAN "SP-200"



2x2" slides; 110 V, AC only; 200 W lamp, blower cooled; condenser system; 5" F:3.5 coated lens; sliding focusing; direct slide insertion.

Price: \$34.95; case \$4.95 extra (also deluxe case at \$9.95). 4" F:3.5 lens available.

SKAN "SP-100"

2x2" slides; features similar to Model SP-200, but has 100 W lamp.

Price: \$24.95; cases and lens available as listed with SP-200.

Golde Manufacturing Co.  
1214-22 West Madison St.  
Chicago 7, Illinois

GOLDE ALL-PURPOSE "1047"

2x2" and 3 1/4 x 4" slides; 110 V, AC; 1000 W lamp, blower cooled; separate blower cools projection head; triple con-

densers; 14" to 26" single element lens for 3 1/4 x 4" slides, 4", 5" or 7" anastigmat coated lens for 2x2" slides; helical focusing; "Manumatic" magazine-type slide carrier for 50 ready-mount or 20 glass 2x2" slides; 2-place sliding carrier for 3 1/4 x 4" slides.

Price, less lamp: \$124.25; case, \$14.50 extra. Also avail-



able for 3 1/4 x 4" slides only, without projector-head fan (Model 1043—\$70.00). Attachments include: 35mm filmstrip adapter; coated lenses; 6 1/2", 9" and 12" anastigmat lenses.

GOLDE MASTER "447"

3 1/4 x 4" slides; 110 V, AC or DC; similar in appearance to Models 1043 and 1047, but has 300 W lamp, convection cooled; triple condensers; 6 1/2" F:3.5 coated lens; helical focusing; 2-place sliding carrier.

Price, less lamp: \$69.00; case, \$12.00 extra. Attachments include: "Manumatic" carrier for 2x2" slides; 35mm filmstrip adapter; lenses from 5" to 12".

GOLDE MANUMATIC



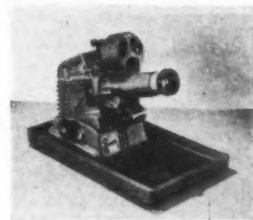
2x2" slides; 110 V, AC; 100, 200 or 300 W lamp, blower cooled; triple condensers; 5" F:3.5 coated lens; helical focusing; "Manumatic" magazine-type carrier for 50 ready-mount or 20 glass slides.

Price, less lamp: \$52.00; case, \$10.00 extra. Two-place

## SLIDE PROJECTORS

sliding carrier and 7" lens also available.

GOLDE TRI-PURPOSE FILMATIC



2x2" slides, 35mm single and double frame filmstrip; 110 V, AC; 100, 200 or 300 W bulb, blower cooled; triple condensers; 5" F:3.5 coated lens; helical focusing; "Manumatic" magazine-type carrier; filmstrip rewind.

Price, less lamp: \$74.50; case, \$10.00 extra. Two-place sliding carrier available.

The Kimac Company  
Old Greenwich, Conn.

KIMAC UNIVERSAL



3 1/4 x 4", 2 3/4 x 2 3/4", 2 1/2 x 2 1/2", 2x2" slides; 110 V, AC or DC; 300 W lamp, vent cooled; 3-element condenser system; 8" coated lens; 2-place sliding carrier.

Price, with carrier plates for one slide size: \$69.50; case, \$15.00 extra. Carrier plates for other slide sizes at \$2.50 per pair.

La Belle Industries  
Oconomowoc, Wisconsin

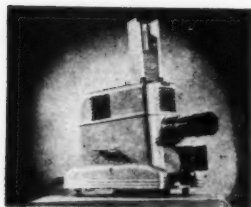
LA BELLE AUTOMATIC

2x2" slides; 110 V, AC or DC; 300 W lamp, vent cooled; 3-element condenser system; 5" F:3.5 Wollensak coated lens; magazine loading for showing 75 ready-mount or 35 glass slides in sequence; remote control; lower magazine files slides in sequence; shutter

## MINICAM SURVEY

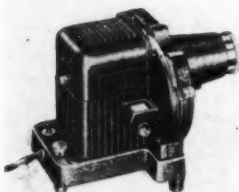
for slide changing.

Price, with 2 magazines, case and built-in screen: \$125.00. Attachments include: double-



size magazines; extra-length remote control cords; blower for using higher wattage lamps; filmstrip adapter; lenses from 2" to 9".

Sawyer's Inc.  
735 SW 20th Place  
Portland 7, Oregon  
VIEW-MASTER "S-1"

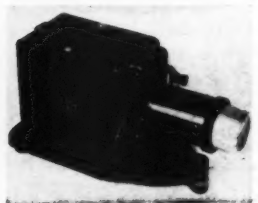


View-Master 7-scene reels only; 110 V, AC or DC; 75 W bulb, vent cooled; 2-element condenser system; F:3.0 coated lens; spiral focusing; mirror for reading scene titles during projection.

Price: \$47.50. Wide selection of 7-scene color reels on travel, natural history, etc.

Sears, Roebuck and Co.  
Photographic Materials Div.  
925 South Homan Avenue  
Chicago, Illinois

TOWER PROJECTOR



2x2" slides; 110 V, AC or DC; 100 W lamp, convection cooled; double condensers; 4" F:3.5 lens; sliding focusing; 2-place sliding carrier.  
Price: \$12.95.

Society for Visual Education  
100 East Ohio Street  
Chicago 11, Illinois

S.V.E. PROFESSIONAL "1000"



2x2" slides, 35mm single and double frame filmstrip; 110 V, AC or DC; 750 or 1000 W bulb; condenser system; 5" anastigmat coated lens; semi-automatic vertical slide changer; rewind for filmstrip.

Price, with case: \$150.00.

S.V.E. ENTERTAINER "300"



2x2" slides; 110 V, AC or DC; 300 W lamp, vent cooled; coated condensers; 5" anastigmat coated lens; automatic vertical slide changer holds 50 ready-mount or 20 glass slides.  
Price, with case: \$75.00.

S.V.E. INSTRUCTOR "300"

Similar to "Entertainer," but takes 35mm single and double frame filmstrip as well as 2x2" slides; vertical slide changer without automatic feature; rewind for filmstrip.

Price, with case: \$90.00. 3", 4" and 7" lenses available.

S.V.E. MODEL "AK"



2x2" slides; 110 V, AC or DC; 300 W lamp, vent cooled; condenser system; 5" F:3.5 anastigmat lens; semi-automatic vertical slide changer.

Price, with case: \$62.90. Full range of lamps and lenses available.

S.V.E. MODEL "AAA"



2x2" slides, 35mm single and double frame filmstrip; 110 V, AC or DC; 300 W bulb, convection cooled; condenser system; 5" F:3.5 anastigmat coated lens; semi-automatic vertical slide changer; rewind for filmstrip.

Price, with case: \$80.00. Full range of lamps and lenses available.

S.V.E. MODEL "DD"

Features similar to Model AAA, but has 150 W lamp and is slightly smaller and lighter.

Price, with case: \$68.50

S.V.E. MODEL "G"

Similar in appearance to Model AAA, but takes 35mm single frame filmstrip only; 300 W lamp, vent cooled; 4" Petzval type lens; filmstrip rewind.

Price, with case: \$65.75. 3", 5" and 6" lenses available.

## MINICAM SURVEY

### S.V.E. MODEL "F"

Similar to Model G, but has 200 W lamp; does not have filmstrip rewind.

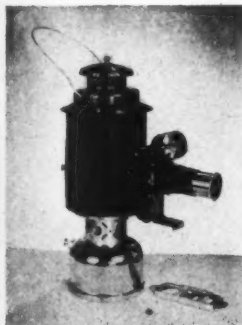
Price, with case: \$48.60. Filmstrip rewind and 3", 5" and 6" lenses available.

### S.V.E. MODEL "Q"

Similar to Model F, but has 100 W lamp; 3" lens.

Price, with case: \$31.40. Filmstrip rewind and 1 1/2", 2" and 4" lenses available.

### S.V.E. INTERNATIONAL

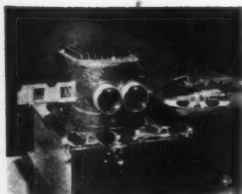


2x2" slides, 35mm single and double frame filmstrip; gasoline-kerosene Coleman lamp; 5" lens; horizontal slide carrier and adapter furnished.

Price, with case: \$87.50

Stereovision  
1312 South Pierce St.  
Amarillo, Texas

### DEPTHRO THREE DIMENSIONAL



35mm glass mounted slides only; 110 V, AC only; two 200 W lamps, fan cooled; two 4" lenses with Polaroid filters; Polaroid viewers necessary.

Price, with case, pair of spectacles, and 9 cardboard viewers: \$145.00.

Three Dimension Company  
4555 West Addison Street  
Chicago 41, Illinois

### TDC VIVID "B"



2x2" slides; 110 V, AC or DC; 150 W lamp, vent cooled; condenser system; 5" F:3.5 lens; rack-and-pinion focusing; 2-place sliding carrier.

Price: \$39.75; case, \$8.50 extra. Attachments include: 300 W lamp conversion unit; blower unit; coated lenses and condensers.

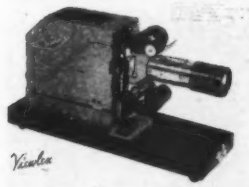
### TDC VIVID "RN"

2 3/4 x 2 3/4" slides; similar to Model B, but has 6" F:3.5 anastigmat coated lens.

Price: \$59.75; case, \$8.50 extra. Attachments include: 300 W lamp conversion unit; blower unit; 2x2" slide carrier.

Viewlex, Inc.  
3501 Queens Blvd.  
Long Island City, N. Y.

### VIEWLEX "AP-2C"



2x2" slides, 35mm filmstrip; 110 V, AC or DC; 150 W lamp, vent cooled; aspheric condenser system; 5" coated lens; spiral focusing.

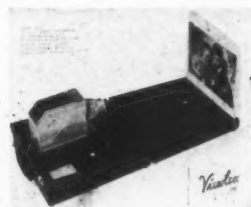
Price: \$67.00; case, \$7.45 extra. Blower base, 7" and 2" lenses with condenser systems also available.

### VIEWLEX "AP-3"

Similar to Model AP-2C, but takes 2x2" slides only.

Price: \$39.50. Case and accessories as listed for AP-2C.

### VIEWLEX "AP-1"



2x2" slides; features and appearance similar to other Viewlex projectors; 2" coated lens; carrying case with built-in screen.

Price, with case: \$64.50. Also available for 2x2" slides and 35mm filmstrip (Model AP-1C — \$77.00). 5" lens with condenser system; transparent screen available.

### VIEWLEX "AP-5"

2x2" slides; features similar to other Viewlex projectors.

Price: \$49.50; case, \$7.45 extra. Fan base and 2x2" slide adapter available.

### VIEWLEX AUDITORIUM "AP-7CT"

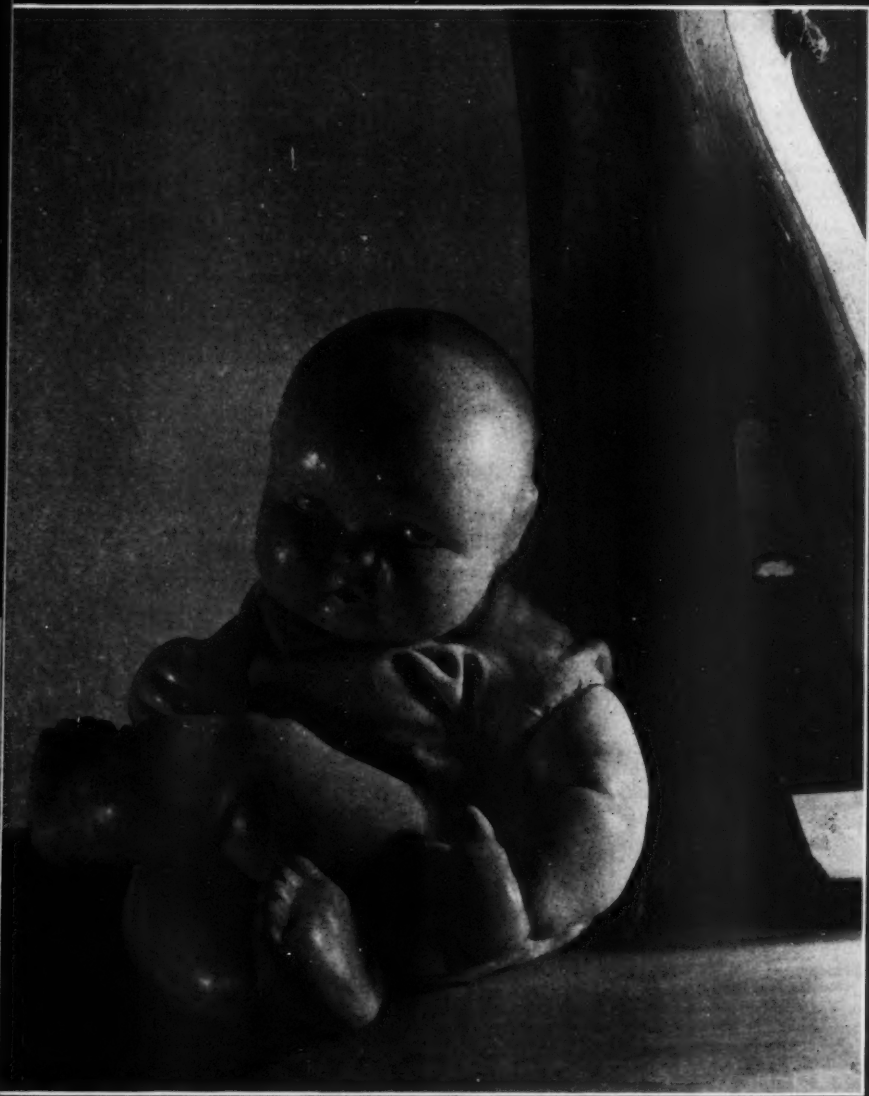


2x2" slides, single and double frame filmstrip; 110 V, AC; 300-1000 W lamp, blower cooled; 5" coated lens; filmstrip rewind. Also available for slide projection only.

Prices from \$149.50. 7" lens with condenser system available.

# melancholy dolls

Ruth Bernhard sees dolls in all the predicaments of human fate



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RUTH BERNHARD'S dolls are almost human: they get the blues, they get into trouble, they are hit by automobiles; some mysterious fate smashes them to pieces, until finally their bodiless heads are offered up as a sacrifice. It's no wonder they look sad.

In order to produce a series of pictures such as these the imagination has to be the peculiarly sensitive kind that sees personality in all inanimate objects. Ruth Bernhard has this sort of imagination. Dolls may be made of rags, or plaster, or sawdust, but to her they are small people, with thoughts, feelings, and a definite life span.

It is difficult to get this diminutive, wiry photographer to talk much about her purpose in making these upsetting pictures. In painting we accept the most shocking scenes as fit subjects for art: there is nothing more horrible than scenes of a battle, yet they have figured in countless paintings in all the world's galleries. In her doll series Ruth Bernhard has merely translated some human states of mind—and body—into toyland terms.

Although she won't discuss her reasons for making the series, she makes no secret of her favorite. It is the portrait of the rueful baby doll, its legs twisted before it, posed in front of a piece of dead wood. This to her seems to express the mood of brooding melancholy that is more common than most people would admit. The lighting from below brings out the hollows beneath the eyes with a haunting clarity.

The picture that attracts most people when they first see the series is that of the two teddy bears. One appears to be collapsing, and the other trying desperately to save him. Here again the lighting dramatizes the scene. It is direct and brutal, coming mostly from one point, as if the bears were involved in some tragedy, and picked up in the glare of searching

light.

Ruth Bernhard's trademark is subtlety. When she is making studies of dolls in the grip of some mysterious and awful fate the pictures themselves have about them an eerie quality. When she comes out into daylight and photographs an everyday horror in doll terms the result is much less startling. Her photograph of a doll run over over is merely that. Instead of horrifying, it merely brings out the comment: "So what—it's only a doll run over!"

On this page is the grisly little nursery scene of three dolls on the couch. One is minus the top of his head, one is lacking a finger, and the third lies in the

WORKING in the pen-line medium, Cruickshank and Dore, the great illustrators of books before photographs, made their characters as weird and imaginative as they pleased. No one objected. Only lately have a few photographers found the clue to the same type of thinking in photographs. Bernhard does it by means of dolls.





PERHAPS the people above are two worn-out minds, each propped up by the other, or are they only bears? The little girls, prim, proper and fresh from a convent came face to face with death. Bernhard's picture of the carved wooden hand holding a doll's head is a symbol, which each viewer must interpret for himself.

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foreground almost completely dismembered: a leg severed, the head in the lower left with eyes staring in horror. (As though the composition were not gory enough, Miss Bernhard has thoughtfully supplied two extra pair of eyes and an extra disembodied hand to fill in the right lower corner). Here is death and destruction on a print as clear as if it were made at the Battle of the Bulge.

To show that even the most commonplace tasks might be spiced with a little morbidity, the picture of the children in fluffy dresses is a good case in point. Originally made as an advertising photo, this same composition and light setup was used. The only thing different was that in the advertisement a live rabbit replaced the dead sparrow.

Perhaps the most famous of her doll series is the doll's head in the carved hand. There is about this picture some of the mysterious fascination of the Mona Lisa, and, like the Mona Lisa, it defies explanation.

The technical details in these pictures are all the same. They were made on an 8x10 view camera, using a 12" Turner Reich lens stopped down to F:128 (correct; F:128) for maximum detail. The lighting was generally a single flood, and the exposures long—one to three minutes.

Today's photography is grown up, and if you don't believe it, haul out some photo annuals of 1929 and you'll see pictures that even the corniest salon hounds would turn down today. These pictures of Ruth Bernhard's might strike some people as being morbid. Others will think them psychological, and still others will wonder why they were made in the first place. When asked why she made the doll pictures, Miss Bernhard shrugs off the question. It's her hobby as well as her work, making pictures, and the doll subject interested her as an artist.

To those who accuse her of gloom, there is an answer she frequently gives: "Look at the daily paper."



# HANS STEINER

His photographs are representative of the naturalistic trend of Continental photography

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"THE SWISS are generally happy," says Steiner, "the Canton chimney sweep, right, makes his calling anything but grimy work. A song and a professional top hat are his trade marks. The picture below of the thatch-headed boy ear-deep in blackberry pie was made at a Sportsfest. 'Even if I didn't win it was fun,' he was saying as I snapped the picture."



BY ANTON SOUCI

BY AN ODD QUIRK of chance Hans Steiner found himself one sunny day in Bern, Switzerland, the owner of a Rolleiflex camera in place of a promised payment of an old note. Being curious, an artist, and having no instruction book for the camera, was a happy set of coincidences for Steiner. He began to take pictures that were free of dogma and "don'ts".

Like the bumble bee he did not know his limitations. Scientists have proved that the bee's aerodynamic design makes it impossible for him to fly; and Steiner, not having read of the problems of taking a picture was likewise wonderfully uninhibited in his approach to photography.

His photographs are of the outdoors and his people are never models, but are

workmen, athletes and children. Sunny or hazy mornings, snowy days, are all pictured with natural light. Like most of the Continental photographers, Steiner uses flash but rarely.

Steiner's first success came as a staff photographer for the Swiss art magazine, "Du". His knowledge of art, and his ability to speak French, German, Italian and English fluently enabled him to bring the sophisticated readers of this magazine

photography that was honest yet adult in its approach to life in the pre-war Europe.

In 1938 Steiner looked at America and Americans for a Swiss picture magazine, the equivalent of *Life*, in a series of pictures that would make Americans wonder "Why didn't I see *that*?" Now at the age of 35, Steiner is on one of his biggest picture-taking adventures; a trip through Asia to cover the boiling cauldron of ideologies of the awakening Far East.

"THE ALPS are my favorite picture-taking spot," says Steiner. "The picture of the little winding road and the blossoms of June keep Spring in my studio. The moment I caught of the sailboat (right), running down-wind ahead of the thunderstorm, is one any yachtsman will recognize. A second later the man on the bow threw the line to make his buoy."







# cliches verres

Corot made these photographic etchings in 1853

BY MERWIN DEMBLING

IT HAPPENED just about one hundred years ago. The members of an informal camera club in the little French town of Arras discovered what they thought would eventually become the bridge between photography and art. In those days the burning question was: "Will photography mean the end of painting?" Art was regarded as one of man's noblest pursuits, while photography was just a pastime for screwballs. The camera was looked upon as a serious threat to the painter's livelihood. Whenever a photographer would get a portrait commission, copying job, or some other plum, which represented

money out of the painters' pockets, there was a chorus of, "I-told-you-so's."

So when M. Grandguillaume, the drawing teacher, M. Dutilleux, the stationer, and M. Cuveilier, the olive oil manufacturer, who were members of the club, discovered how to make photographic etchings they were delighted. Their joy was almost boundless when a famous French artist came to Arras to spend his vacation. They invited him to one of their meetings, handed him a glass plate that they had prepared, and told him what to do. He dashed off a little landscape, at which point the camera clubbers disappeared



THE black "negative," left, is an original plate that Corot made. For this one he used a brush handle. Prints made from the glass plate looked like the miniature shown above. Since they were contact prints they would have been the exact size, however.

THE COROT CLICHE VERRES ARE REPRODUCED THROUGH THE COURTESY OF THE METROPOLITAN MUSEUM OF ART, NEW YORK CITY.



into the darkroom, emerging half an hour later with five copies of his drawing.

Now it was the artist's turn to be delighted, for the copies of his drawing were exact. He was mystified, too, for the process, while it would be considered baby stuff in 1949, was tinged with magic in 1853.

The artist's name was Jean-Baptiste Corot, and so great was his enthusiasm

for *clichés verres*, or translated freely, glass snapshots, that he made over a hundred of them, of which 66 have come down to us (and command stiff prices at art auctions). Moreover, he passed the prepared glass plates out among his friends, convinced that he had found a process that would replace the 400-year-old rigamarole of etching with acids. The fact that it hasn't replaced etching is



**THE TWO** Corot prints on this page were made with an etching knife on a glass plate. When they were printed on photographic paper recently and toned in a sepia they had all of the delicacy of line of a regular etching.

strange, and can be explained only by the fact that artists are odd people. If they weren't they might have chosen an easier way to make a living.

Corot used to keep a supply of the prepared plates on hand, and whenever rainy weather prevented his going out to the fields to paint, would sit at home and make glass snapshots. His friends never grew too enthusiastic over the process, but nevertheless there are 17 still in existence by Daubigny, two each by Theodore

Rousseau and Millet, and one fine known plate by the master Delacroix.

After this junior spurt of enthusiasm the process disappeared, having attracted some of the top names in 19th Century French art. Its neglect seems to be rather a shame, since the process is childishly simple and has many possibilities. A scholarly article in *The Print Collector's Quarterly* refers to it as: "this process which transfers on to paper even more freely and directly than does etching, the



THIS is the only portrait that Corot is known to have done in the cliché verres medium. Perhaps he feared that he would be encouraging competition from photographers. And that was the worry of painters in 1853.

touch and personality of the artist."

However the artists' loss is the photographers' gain in this case, and anyone with a piece of glass, some printing paper, and a developing tray can make his own etchings in the darkroom.

Preparing the glass plate, which was so mysterious in 1853, is child's play in 1949. All that has to be done is to coat it over with poster color, the thick water color that the dime store sells in jars.

White is the best color to use, and as an extra precaution it might be mixed with a little red to make doubly certain that any light that might come through it is "safe." That is not much of a problem, through, for a surprisingly thin coat of the paint will be light tight.

After the color has dried it is ready to be drawn on. The drawing is scratched through the paint to the glass, using whatever implement is handiest. A penpoint will work, and so will a needle stuck into a wooden handle. Anything that will scratch paint will do the job. Corot's prints were made with a variety of tools, including the handles of his brushes, and his fingernails.

The print is made like any other contact print. If the glass used is the one that fits in a printing frame the process is simplified. There are two methods of printing the *cliché verre*: with the paint side to the paper, and with the glass side to the paper. Paint to paper gives a fine, sharp line, an exact reproduction of the drawing. Glass-to-paper gives a softer effect, a fuzzy, soft-focus line that is often very pleasing.

After developing and fixing, like any other print, the job is done.

Once the basic steps are mastered—a matter of fifteen minutes or so, there is practically no end to the variations that can be rung in. For example, the coat of paint—or "ground" to give it its technical name, can be stippled with the bristles of a stiff brush.

Or the entire process can be reversed. Drawing on the clear glass with a brush charged with India ink, and then printing through it will give a white line on a

black background. Of course all writing or printing will be reversed when prints are made with the drawing facing the paper; in fact the entire picture will be "flopped." Normally this doesn't matter too much, but care should be taken where letters appear on the picture either to draw them in reverse or print glass-to-paper. Another point to watch is not to apply the ground color in too thick a coat. All that is needed is enough to make the glass opaque. If the paint is piled on there is a chance that it will chip or flake off as the drawing is being made. And, unfortunately, there is no satisfactory way of making corrections on a *cliché verre* plate. Theoretically it looks simple to touch up a mistake with some more poster paint, but in practice this will be found more often than not

(Continued on page 116)

ANYONE can make a photographic etching. The technique is shown below. An opaque "ground" has been applied to a piece of clear 8 x 10 glass. A sketch is made on this in pencil. Then the drawing is scratched through to the clear glass with an etching knife or any other sharp tool. This plate is then laid on a piece of photographic printing paper and exposed to light. The print is developed like any other piece of contact paper.

Photo: Ken Rarich





# THE BIG EYE

University of Rochester shows off its new F:1 lens that makes pictures on curved film

"FLASHLIGHT LAWRENCE," the so-called father of flash photography, thought nothing of trudging to an assignment with a gunny sack of flashlight powder slung over his shoulder. Once he touched off twenty pounds of powder for a single shot of Chicago's Coliseum. That was almost fifty years ago; yet even in these days of super lighting equipment, fast films and faster lenses, the photographer is still fighting for his light.

The newest weapon, and one that makes big promises to improve the lot of dim-light photographers, is a fast lens camera recently announced by the University of Rochester. It was designed and built at the University's Institute of Optics and is

another war born project that looks good in peace time too.

Equipped with a curved field lens that is a daddy of them all, the new camera is best described by saying it's more lens than camera (the lens alone weighs thirty pounds, while the camera body tips the scales at a mere twenty-five). The camera's F:1 lens has a focal length of six inches, covers a field of  $36^\circ$ , and is rated  $2\frac{1}{2}$  times faster than any existing lens of comparable image quality. All of which adds up to a lot of picture for a little bit of light.

Already the new camera has shown some pretty amazing results. The two photos reproduced here—one on this page,



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and the other on page 118 were both taken under lighting conditions that would normally be judged impossible. The basketball ball action shot was snapped at 100 feet with standard gym lights as the only illumination. For the night photo of the University campus (page 118), a single No. 22 flashbulb provided enough light to illuminate a row of poplar trees 600 feet from the camera, while at the same time covering an area almost equal to a full city block.

Perhaps the most unusual feature of the new lens is its excellent over-all image correction—resolving an angle of 21 seconds over nearly the entire field. This is

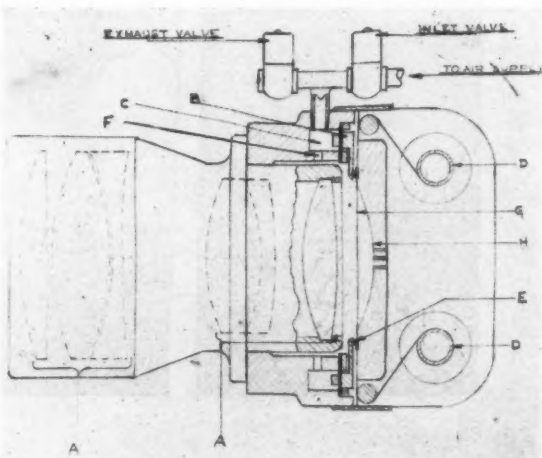
demonstrated very ably by the original print of the campus photo, where individual bricks in the buildings 300 feet away are distinctly visible and countable.

Generally the big drawback in making large lenses is that all the various lens aberrations (such as spherical aberration, chromatic aberration, coma, etc.) become increasingly difficult and impractical to correct as a lens grows in effective aperture, that is, in f-value. In the new lens, however, an optical shortcut has been used to help keep some of these trouble makers out of the act. This is the use of a curved field, instead of the conventional flat film plane.

It's a neat trick, and works in the following manner. Since the image surface of the lens is a sphere, the film must be curved during exposure. This is accomplished by blowing the film into the spherical image surface, a concave metal surface back of the rear lens, with compressed gas at twenty to twenty-five pounds per square inch pressure. The pressure of the air stretches the film into shape while the exposure is being made; then pressure is reduced to normal so the film can be advanced for the next picture. And, to do it all up in a big red ribbon, the designers have added automatic inlet and exhaust valves, as well as a motor-driven film transport, that permit taking sequence pictures at the rate of about one per second.

(Continued on page 118)

**SNAPPED AT F:1**, the basketball action shot (left) was taken with standard gym lighting as the only illumination. Exposure was 1/45 sec. Notice how detail is preserved even in the picture corners. The new camera (above) holds a precision mechanism for curving the film during exposure. The hose supplies compressed gas to chamber marked "C" in the schematic diagram (right), which is a circular groove behind the clamping plate "B". Pressure forces this clamping ring to grip the film, while at the same time pressure has built up between the lens and film, stretching the film against spherical image surface "H." With the film held in this curved position the exposure is made; then exhaust valve opens, pressure is released and film advances automatically for next picture.



*Minicam*

# PHOTO DATA

CLIP SHEET FOR PERMANENT REFERENCE

## Correcting Distortion in Enlarging

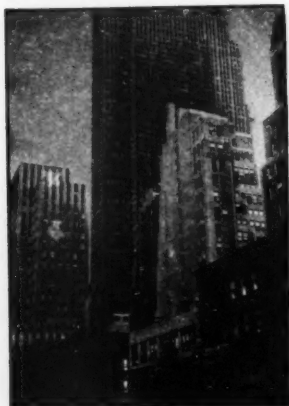
Most photographers have noticed that when a building is photographed with the whole camera tilted up, the vertical lines in the building converge toward the top. These lines can be made parallel in an enlargement by appropriately tilting the paper easel or, if the enlarger construction permits, by tilting the negative carrier, or both. You may also have noticed that when enough tilting adjustment has been made to render the vertical lines parallel, the original proportion of the subject may or may not be reproduced. Thus the building may turn out to be either slimmer or wider in proportion to its height.

The proportion of the subject is preserved only when the lens-to-negative dis-

tance in the enlarger is equal to what the lens-to-film distance was in the camera when the picture was taken. Assuming that the picture was made of a distant object with the camera focused at "infinity," which is the usual case, the lens-to-film distance in the camera approximates the focal length of the camera lens. In enlarging, however, as in all close-up photography, the lens-to-negative distance must be appreciably greater than the focal length of the enlarger lens in order to obtain correct focus. Hence it follows that strictly accurate proportions in the print can only be maintained when the focal length of the enlarger lens is enough shorter than that of the camera lens to

SHOOTING from a low angle to emphasize the contrast of the "old and new" introduced violent perspective (below, left). By tilting the paper easel in enlarging, the converging lines of the buildings were made parallel (center), but this in turn made the RCA Building too slim in relation to

its height. A second tilt of the easel (right) corrected perspective and gave true proportion. In each case, the black border indicates the entire negative area. A more precise method of maintaining correct proportions is the use of a proxar-type lens as described in this article.



allow for racking it out into focus. For all-around enlarging use, of course, it is necessary to compromise on an enlarger lens having somewhere near the focal length of the camera lens.

It is also interesting to note that since the lens-to-negative distance in the enlarger changes with magnification, there is only one magnification for a given camera lens and enlarger lens combination that will preserve the proportion of the subject.

As an example, let us take a camera with a 4-inch focal length. Cameras this size usually do not have a swing back and the camera must therefore be tilted up to take a picture of a building. The negative so made can be enlarged, the vertical lines made parallel, and the proportion preserved only if the enlarging lens is 4 inches from the negative. This condition can be met by an enlarging lens 3 inches in focal length used 4 inches from the negative. This will give a 3X enlargement; the easel must of course be tilted appropriately. Sharp focus can be obtained over the whole print by using a small aperture or by tilting the lens or negative carrier.

If a 4-inch enlarging lens were used, the lens-to-negative distance would be greater than required and when the easel is tilted to rectify vertical lines, then the proportion would be too narrow for the height. Like-

wise, if it were possible to obtain an enlarger lens-to-negative distance shorter than required, the rendering of the building would be too wide for its height.

In practice, the enlarger lens generally has about the same focal length as the camera lens so that the proportions will suffer a slimming effect. The addition of a proxar-type supplementary lens such as the Kodak Portra Lens 3+ to the enlarger lens will result in a combined focal length of about  $3\frac{1}{4}$  inches. Alternately, the addition of a 2+ lens gives a combined focal length slightly greater. These supplementary lenses, therefore, offer the possibility of adjusting the effective focal length of the enlarger lens so that correct proportion can be obtained in such enlargements. The chart below shows the effective focal lengths obtainable with various combinations of supplementary lenses and enlarger lenses. Further data on combined focal length will be found on page 28 of the Data Book published by Eastman: "Kodak Lenses, Shutters, and Portra Lenses."

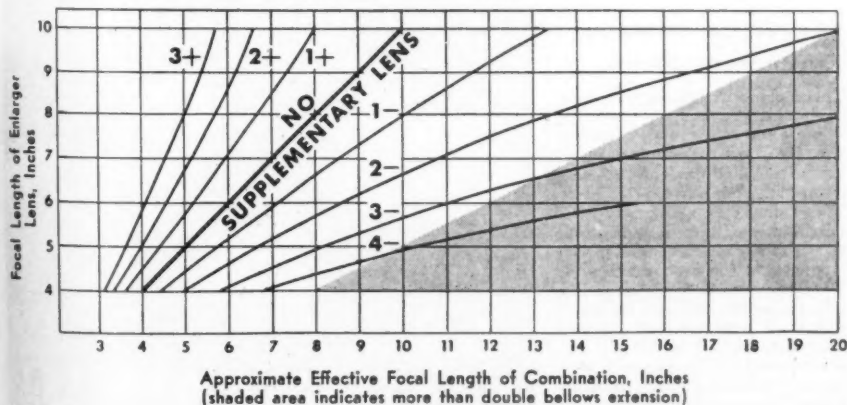
The formula for correct proportion is

$$M = \frac{E}{C-E'}$$

where M is magnification, E is focal length of the enlarger lens, and C is focal length of the camera lens.

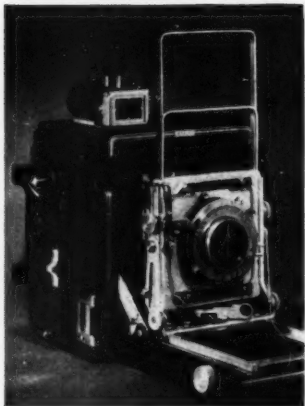
—John W. McFarlane.

From Kodak Data Book — Copyright Eastman Kodak Company



# FACTS YOU SHOULD KNOW\* ABOUT THE *Pacemaker* **SPEED** AND *Crown* **GRAPHICS**

**\*FOR PRIZE - WINNING PICTURES**



With your *Pacemaker* **SPEED** or *Crown* **GRAPHICS**, you're ready to shoot superlative pictures at once. That is, there is no immediate need for many of the helpful accessories, such as a range finder (you can get excellent focusing on the ground glass) . . . flash synchronizer or 5- and 7-inch reflectors. It would be well to first familiarize yourself thoroughly with the great capabilities of the famous camera you own. Then gradually round out your equipment with a new Graf-lite Flash Unit, for instance.

Your new **SPEED GRAPHIC** has many plus features for prize-winning pictures! Here are a few.



## **New Leather Customcase for Graphic Owners**

This deluxe Customcase accommodates all *Pacemaker* and Anniversary **GRAPHICS** and comes in two sizes: one for either the "34" or "45" *Crown* and **SPEED GRAPHICS**; one for the "23" size. The camera compartment with movable partition is adjustable to the type camera carried. Space is provided for both the 5" and 7" reflectors, battery case, film holders, wide angle lens on board, film pack adapters and supplies. The rich leather is heavily saddle-stitched. All hardware is solid brass. Maroon velvet lined interior. See it today!

picture you want. The optical viewfinder compensates for both horizontal and vertical parallax at the same time!

The versatile front standard includes tilting front for controlling plane of focus and

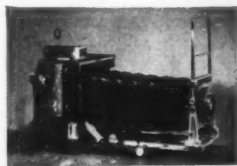


drop bed permits efficient use of wide angle lenses.

And for long focal length lenses or close-up work (table-top photos and copying) you have double extension bellows that further enhance the versatility of the *Pacemaker* **SPEED** or *Crown* **GRAPHICS**!



Above: the telescoping open frame viewfinder with parallax adjustment prevents "head-chopping," helps you get on film exactly the

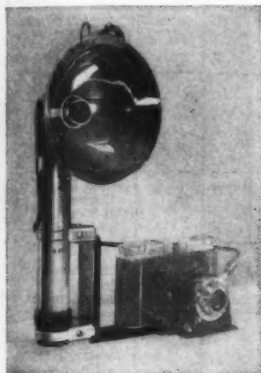


**THE N. Y. TIMES FEATURED IT...**



**GRAFLEX MADE IT!**

# NOW! By popular demand—New Brackets for using GRAFLITE FLASH ON YOUR CAMERA!



The versatile new Graflite by Graflex was developed to give Graflex camera owners the very finest in flash units. Eight years of careful research went into producing this dependable

## THERE'S NO TIME LIKE THE PRESENT...

to make those potential prize-winning photographs for the new GRAFLEX PHOTO CONTEST. Now's the time to start planning new pictures and to go through your present negatives for promising material.

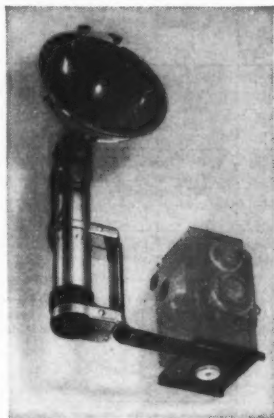
Watch for announcement soon of the big 1949 GRAFLEX PHOTO CONTEST. Plan for it now so you won't lose out in the last minute rush. Prepare for your share of the prize money!

unit to satisfy the needs of both amateur and professional photographers.

Now — because of popular demand — other than Graflex-made cameras can be fitted with new, specially-developed Graflex Brackets enabling you to use the new Graflite Flash Unit!

### New Brackets Low Cost

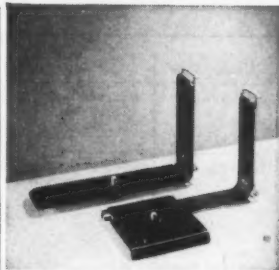
These new brackets are precision made to fit reflex, "press," folding or "candid" type cameras and are very nominally priced. If you own several



cameras, you will welcome the advantage of being able to quickly and easily use Graflite Flash interchangeably. Cords tailored to fit various types of cameras are readily available.

### Graflite Is Finest In Flash

Graflite, the most modern of flash units, is the answer to any



flash problem you may encounter. It has five outlets, each clearly marked for its intended purpose. Streamlined into the switch housing is the multi-purpose circuit controller or nerve center — through which any one of *three circuits* may be selected.

Five- or seven-inch reflectors can be used. The five-inch reflector may be equipped with an accessory plastic shield, and also provides adjustment for wide or narrow light beam. Both reflectors have push-button lamp ejectors that speed up the taking of flash pictures.

In addition, you're able to use any reasonable number of batteries in a Graflite case (through the use of unicell extension tubes) to get more power than ever before, for more Graflex *side lighting* units with longer cords!

Complete Graflite Flash Units are priced from \$27.25.

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*Prize-Winning Cameras*



# SALONS AND EXHIBITS

★ FOLLOWS P. S. A. RECOMMENDED PRACTICES

Closing Date	Name of Salon	For Entry Blank, Write to	Number of Prints and Entry Fee	Dates Open to Public
Exhibit to see	★Eleventh International Salon of Nature Photography.			Buffalo Museum of Science, Buffalo, N. Y., May 17-June 13
Exhibit to see	★First New York International Color Slide Exhibition.			Central High School of Needle Trades Auditorium, 225 W. 24th St., New York, N. Y., June 3 and 6
Exhibit to see	Tenth Annual Exhibition of the Germantown Photographic Society.			Banquet Hall, Vernon House, 121 W. Chelton Ave., Philadelphia, Pa., June 7, 8 P. M.
Exhibit to see	★Third Annual Photographic Salon of San Diego County Fair.			San Diego County Fair, Del Mar, Calif., June 24-July 4
June 1	★Eleventh Annual Finger Lakes Salon of Photography.	Auburn Camera Club, c/o Cayuga Museum of History and Art, Auburn, N. Y.	4	\$1.00 Cayuga Museum of History and Art, Auburn, N. Y., June 5-July 3
June 1	★Premier Salon International de Quebec.	Pauline Fiset, Secretary, 2090 Blvd. Laurier, Sillery, Quebec, Canada.	4	\$1.00 Quebec Provincial Museum, Sillery, Quebec, Canada, June 19-July 5
June 6	★12th Memphis Pictorialists Salon.	Mrs. Louise Clark, Brooks Art Gallery, Overton Park, Memphis 12, Tenn.	4	\$1.00 Brooks Art Gallery, Overton Park, Memphis, Tenn., July 1-26
June 11	Nineteenth Midland Salon of Photography.	J. W. Steele, Salon Secretary, 84, Wellington Road, Birmingham 20, England.	4 prints and/or slides in 5 classes	Art Gallery, Shrewsbury, Shropshire, England, July 16-Aug. 13
June 14	★1949 Hartford International Salon of Photography.	Raymond J. LeBlanc, 234 S. Quaker Lane, West Hartford, Conn.	4	\$1.00 The Wadsworth Athenaeum, Hartford, Conn., June 29-July 31
June 15	★First Washington, D. C., International Salon of Photography.	Mrs. Lee Beiser, Salon Secretary, 3119 2nd St. North, Arlington, Va.	4 mono-chrome and/or color transparencies	\$1.00 each section National Museum, Washington, D. C., July 1-31
June 15	★1st Hawaii International Salon of Photography.	Frank Kraulik, Salon Chairman, 1354 Kapiolani Blvd., Honolulu, Hawaii.	4	\$1.00 Academy of Arts, Honolulu, Hawaii, July 1-10
June 30	★First Hawaii International Color Slide Exhibit.	Wm. P. St. Clair, Jr., 1562 Peninsula St., Honolulu 25, Hawaii.	4 color slides	\$1.00 Academy of Arts, Honolulu, Hawaii, July 11-16
July 16	★2nd Illinois State Fair International Salon of Photography	George L. Cashman, 315 E. Monroe St., Springfield, Ill.	4	\$1.00 Exhibition Bldg Fair Grounds, Springfield, Ill., Aug. 12-21
July 23	94th Annual Exhibition of Photography of The Royal Photographic Society.	Secretary, The Royal Photographic Society, 16 Princes Gate, London, S. W. 7, England.		16 Princes Gate, London, S. W. 7, England, Sept. 9-Oct. 26
July 25	★Second M. P. S. International Salon of Photography.	Dr. G. Thomas, Salon Chairman, 50, Sri Rama Mahdhir Road, Bangalore 4, India.	4	\$1.00 or 5/- sh. September



## CAMERA CLUB NEWS AND IDEAS

Now that P.S.A. has discontinued its camera club print interchange program, any club wishing to view prints from another club will be obligated to make its own arrangements with other clubs that are interested. There are several reasons why P.S.A. ceased its interchange idea, but perhaps the most important one is the fact that it was exceedingly difficult to schedule a set to arrive at the club in time for its meeting night. In the event the prints failed to arrive in time, the set would, of course, be retained for the following meeting which might be as long as two weeks, or even a month. When such delays are multiplied by the number of clubs in the interchange, the result is obvious.

Karl Baumgaertel, A.P.S.A., author of a number of articles in *MINICAM* on color, and member of the *California Camera Club*, has been signally honored in being one out of four in the entire country invited to exhibit color slides in this year's "Tops in Photography" show in New York.

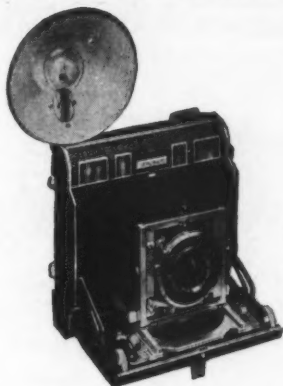
We learn of a new camera club in the Detroit area called the *Alvin Camera Club*. Although they'll have stiff competition in that section from the *Detroit Camera Club* and *Silhouette Camera Club*, we'll go out on the limb to predict it will shortly be one of the top-ranking clubs in the country. Their official publication, "The Bromide Bugle," is a gem.

From the "Town Hall Crier," official publication of the *Town Hall Camera Club* (Germantown, Pa.), comes this little tip. If you wish to see how your print would look if it were toned, you can do it by placing a piece of cellophane of that color over the print. (Ed. Note: You might actually tone a print too, to see how it would look.)

There is an interesting article in *Washington's Council of Camera Clubs "Bulletin"* entitled "Who is Going to Judge the Judges?" by J. W. Rasmussen, A.P.S.A. The *Chicago Area Camera Clubs Association* will have the prolific exhibitor, Jean Elwell, for its speaker. The *Cleveland Photographic Society* will move to a new location. Their present plans include a studio twenty by thirty feet, an auditorium seating 140, which can be expanded by using a lounge to accommodate 200. Also included are a large lounge, two wash rooms, a darkroom, and kitchen. They will certainly have a set-up few clubs can boast of.

The *Woodland Camera Forum* (California) offers this suggestion: Can you remember the first print you ever entered in a club competition? How about a mid-month competition showing some of these old timers? This idea is not presented to make anyone's face red but as an inducement to some of the beginners to bring their prints around to the meetings, where they can see what some of the top men have done in the past.

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## KALART

# PHOTO Guide

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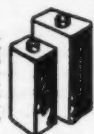
• You've promised yourself a slide projector  
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The MARTON SLIDE PROJECTOR takes all  
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## BOOK REVIEWS

CLARENCE KOCH

All the books reviewed in this column are obtain-  
-able from the Book Department, Minicam Photog-  
-raphy, 22 East Twelfth Street, Cincinnati 10, Ohio,  
postpaid, at the prices indicated.

### Child Photography The Modern Way

By Josef Schneider  
The Camera Magazine \$4.59

WRITTEN and illustrated by one of the fore-  
-most baby photographers in this country, and  
unlike other books of this kind dealing with  
child photography, this book concerns itself  
chiefly with the methods used by the author in  
handling and photographing children. He tells  
how to anticipate their behavior, and how to  
"baby charm" them to get those out-of-this-  
-world expressions which only children can give.

Illustrating his work with 275 excellent pic-  
-tures and lighting diagrams, Schneider shows  
the wrong as well as the right way to do it.



Included in the 208 pages of the book is a  
chapter on the three principle types of lighting  
—flood, flash, and speedlights. It is interesting  
to note that about seventy percent of the il-  
-lustrations were made with flood lights, proving  
that flash, although helpful, is not necessary  
for successful child photography.

There is also detailed information on how to  
shoot twosomes as well as how to take children's  
pictures for advertising. And color as well as  
black-and-white is covered.

Anyone interested in photographing children  
will find this book most helpful.

### Modern Photoengraving

By Louis Flader and J. S. Mertle  
Modern Photoengraving Publishers \$15

Of the very few books ever written on photo-  
-engraving, all are out of print and none is  
available today, so this book fills an excep-

tionally important role in this field. Despite the fact that photoengraving is one of the most salient businesses of our time, there has not been, until now, a thoroughly reliable text or reference book to which the worker could turn for assistance; it was simply a question of working the problem out himself, which, of course, involved a considerable loss of time and material. For such a reference this book will serve well.

The authors, both practical photoengravers and well qualified, give not only their own extensive experience in this volume, but that of every known authority and expert—226 concerns and individuals—in the industry. Every operation is fully explained in non-technical language that is easily understood.

The eighteen chapters include: Principles and Purpose of Photoengraving; Original for Reproduction; Gallery Equipment; Negative Materials; Line Photography; Halftone Photography; Color Photography; Stripping; Photoprinting; Special Photoprinting Methods; Line Etching; Halftone Etching; Colorplates; Finishing; Machining and Mounting Plates; Proving; Weighing and Measuring; and Process Hygiene.

There is also a Glossary defining 775 trade terms, 40 pages of historical and introductory matter, 47 tables, 206 chemical and mathematical formulas, and 392 illustrations in black-and-white and color in addition to numerous other charts and diagrams.

### Swiss Camera Monthly

The beautiful, tri-lingual magazine *Camera*, published in Switzerland and with twenty-five year's standing in England and on the Continent, is now open to subscriptions from American readers. Edited in French, German and English, *Camera* reviews the work of leading European and American photographers, and discusses the latest international developments in photographic and motion picture techniques. Featured in the magazine are fine photogravure and halftone reproductions in full 8x11" size, which include prints from many international exhibits as well as selections from the work of individual photographers. Printed on heavy enamel stock, the quality of printing and photographic reproductions is on the usual high level of Continental craftsmen.

One highspot of a recent issue of *Camera* was an article dealing with the photographing of art objects having brilliant plane surfaces—gilded statuary, chased silver, etc. The discussion included the various background and lighting experiments used to document the pieces while at the same time to retain their original character and feeling, and was accompanied by a striking set of photographs.

Although the lead articles are carried in all three languages, occasional articles are printed in only German or French.

American subscription rates are \$7.00 per year, \$12.00 for 2 years, and \$3.50 for 6 months. Issues arrive about three to four weeks after date of publication. Subscriptions and correspondence should be addressed to *Camera's* American representative, Rayelle Foreign Trade Service, 5700 Oxford Street, Philadelphia 41, Pa.

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## UCTS • NEWS ABOUT

### NEW PRODUCTS



#### Sequence Shooting with Cut Film

What looks like an answer to many a cut-film user's dreams is the new Multi-Mag Holder recently announced. A new idea in film holders, the Multi-Mag is actually a cut-film magazine providing eight fast sequence photos with merely a pull and a push between shots. You load it with your favorite brands of film, black-and-white and color—all at the same time—then shoot them in any order. An automatic counter window in back of holder keeps track of the exposures.

It's not done with mirrors, but with a stack of eight aluminum septums holding the cut film, a sliding drawer and an outer magazine. After the dark slide is drawn and the first exposure made, the drawer is pulled to its full extension, and the front (exposed) septum is drawn off the stack into the drawer and snaps to the rear. The second septum is then automatically ready for exposure, while the exposed septum is returned to the back of the pile when the drawer is pushed closed. There's no need to close the dark slide, of course, until you've finished shooting.

The Multi-Mag Cut Film Holder is constructed of light weight aluminum, is only slightly thicker than conventional double holders, and does not interfere with the camera rangefinder. It is now available in 4x5" size for \$22.50 including Federal Tax.

The Multi-Mag Corp.  
317 Carlton Building  
Cleveland, Ohio

#### Improved Paper Developer

A good developer made better is the improved Von-L Paper Developer recently announced by Mon-Blanc Chemical Co. The new Von-L has a reduced fog level that allows prints to be developed as long as five minutes without graying the whites, so that shadow detail can be developed fully while the extreme highlights remain unaffected. Packaged in concentrate form, like other Von-L developers, it can be diluted with twenty to thirty parts of water depending on contrast desired. Among other features not changed are Von-L's wide working temperature range (60°-90°F), its long keeping qualities, and increased emulsion speed (6-8

times with bromide paper). Sixteen ounces of concentrate, enough for  $2\frac{1}{2}$  to  $3\frac{1}{2}$  gallons of working solution, sells for \$2.25.

Mon-Blanc Chemical Co.  
Fort Wayne 3, Indiana

#### Plastic Lamp for Electronic Flash

A tough plastic envelope is the top feature of a new electronic speed flash lamp recently announced by the Amglo Corporation. Containing an auxiliary gas reservoir and extra large cathode, the lamp is designed for heavy duty service in AC and large, high power, portable electronic flash units.

The new Amglo lamp, designated by No. 88-P9M, produces about 45 million peak lumens at the recommended operating voltage of 2000-2500 volts. Its maximum energy input is 300 watt-seconds, with high voltage pulse as the discharge method. The bulb has a standard five-pin base and measures 3-inches long, less the pins, by  $1\frac{1}{2}$ -inches in diameter. Further information on the Amglo 88P9M lamp may be obtained by writing . . .

Amglo Corporation  
4234 Lincoln Avenue  
Chicago 18, Illinois



#### AMAZING NEW CAMRA-LIGHTER

Packet lighter that looks like a tiny 35 mm. camera



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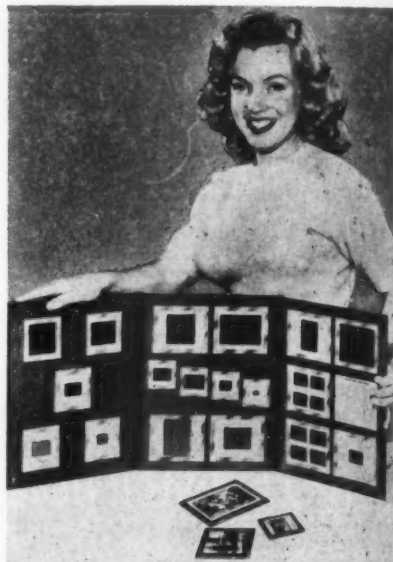
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3807 Benefit St.

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## Complete Line of Film Mounts

Whatever your projector and film size, there's an Emde aluminum mount to fit your needs. That's the latest from Emde Products who announce a complete line of their Protectochrome Film Mounts for all standard transparency sizes from 16mm single frame up to 3¼x4" lantern slide size. The wide selection is made up of three standard frame sizes and eighteen mask sizes, which allow 35mm users, for instance, to mount their transparencies in any of four different ways—masking them singly in 2x2", 2-3/4x2-3/4", or 3¼x4" frames, or



masking four transparencies in one 3¼x4" frame.

According to Emde, it takes just 60 seconds to give each of your transparencies the protection of a Protectochrome Mount, and there's no glass involved, no lint problems, no pasting or trimming. You simply attach your film to the proper size mask with the dry adhesive tabs provided, fold the mask and slip it into the Kodapak sheet, slide these into the aluminum frame, then fold the scored frame flap with the folding tool that's included. Since Kodapak sheet is used in place of glass, the finished slide is lightweight, unbreakable, and free of Newton's rings.

To aid in your selection of the proper frame and mask combination for your requirements, photo dealers have a sample display made up of the complete line of Emde Protectochrome Film Mounts. All mounts are packaged 20 and 100 to a box and are priced between 7½¢ and 15¢ each, depending on frame size and quantity purchased. For illustrated folders write...

Emde Products, Inc.  
4031 Elenda Street  
Culver City, Calif.



### Free Titles for Your Movies

Many amateur movie enthusiasts shoot their pictures, send them away for developing, then project them without any thought of giving them a title. For the audience, it's like going to a restaurant and being served without consulting a menu.

Realizing that titles add the professional touch to home movies, Ideal Film & Supply Co. has inaugurated a special titling service with each roll of their 8mm and 16mm movie film. In each box of Ideal movie film is a sheet listing over 30 different titles. All the user has to do is select a title applicable to the movies he has taken and write or paste it on the inside cover of the mailing carton. When the processed film is returned, the title selected will be spliced to the film in place of the customary blank leader. Each title is designed with an artistic background and customer suggestions are encouraged so that popular new titles may be added continually to the list.

Ideal Film & Supply Co., Inc.  
630 9th Avenue  
New York, New York

### Prints Without Paper

For camera fans who like to see what they'll get before bothering to mix solutions for print making, there's a new product on the market called Info. Info provides a preview of the evening's printing session by making temporary "prints" without paper or chemicals.

In a dark room a negative is slipped into

the book-like device, which consists of a phosphorescent screen hinged to a filter glass. Then the filter-negative-screen combination is exposed to a No. 2 photoflood for three seconds. When the negative is removed, a positive image



glows on the phosphorescent surface for about a minute. Price for the  $3\frac{3}{4} \times 3\frac{3}{4}$ " size is \$3.00. Info is also available in  $4 \times 5$ ",  $5 \times 7$ ", and  $8 \times 10$ " sizes.

Novalty Scientific Prod.  
R. R. 2  
St. Paul 6, Minnesota

### New Compo Enlarger

The latest news in the enlarger field is Compo's Model 620, a low cost enlarger for

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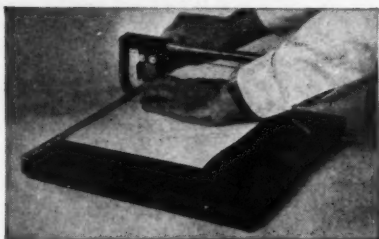
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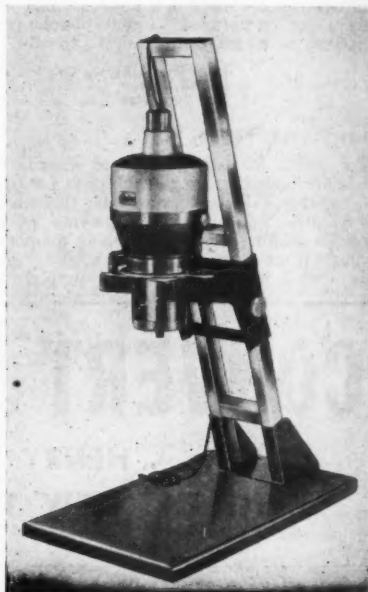
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**MAINE PHOTOS**  
Box 1622 D — Portland, Me.

negatives up to 2 1/4 x 3 1/4". Boasting an inclined double-channel upright of structural steel, the new enlarger is built for maximum rigidity at minimum cost.

The lamphouse is an integral part of the light system and is specially designed to help eliminate bothersome hot spots. Aluminum is used for the upper section of the housing to provide for fast heat dissipation, while the lower part is made of steel for long service. Other features of the new 620 enlarger are: 3 1/4" F:7.7 anastigmat lens mounted in spiral focusing tube; rotating aluminum glassless-type negative carrier provided with masks for negatives down to 35mm; heat filter cell for negative protection; rigid pressed-steel base-board for solid support.

The finish is baked-on hammertone enamel and the enlarger is furnished with 8-foot cord



and switch and No. 212 opal enlarging bulb. The Compco No. 620 enlarger is priced at \$28.75 with the tax. Standard accessories include negative carriers for 35mm, 2 1/4 x 2 1/4", and 2 1/4 x 3 1/4" cut film sizes, recessed lens board for 2-inch focal length lenses and extra standard lens board.

Compco Corporation  
2251 West St. Paul Ave.  
Chicago 47, Illinois

### Reflector Coating for Light Bulbs

You can control your lighting effects with a paintbrush if you have one of the new Light-Flex Kits. Light-Flex is a silver-like compound that can be applied to all types of electric light bulbs—photofood, photoflash, or garden variety—to provide controlled and increased

light exactly where needed. With the aid of masking tape, a permanent, non-peeling, non-blistering reflector is painted directly on the bulb. By coating different areas, it can be used to eliminate bulb glare and give soft or indirect lighting effects, to distribute the light



more evenly, or to increase the light concentration (in some cases as much as 84%). The Light-Flex Kit sells for \$1.00 and includes brush, masking tape, complete instructions, and enough compound to treat more than twenty bulbs.

Light-Flex Co., Inc.  
607 Powers Building  
Rochester 4, New York

### Slide Binding Simplified

A new device for speeding and simplifying the task of binding transparencies is the Bindomat, just announced by E. Leitz, Inc. Designed to facilitate correct mounting, convenient lining-up, and rapid, efficient binding of both 35mm and 2 1/4"x2 1/4" transparencies, original models of the Bindomat were pre-tested and improved over a period of several months before actual production began.

Features of the Bindomat include: a built-in illuminating platen, used to align transparencies before mounting, or as a handy viewer; a fluted feed spindle and channel for forming the 1/4" binding tape; a precision knife and centering stop for cutting plastic or cloth tape; and rubber rollers to seal the tape to the glass.

Supplied complete with 100 Leitz ground-edge 2x2" glasses, tape for more than 120 slides, 100 metallized 35mm masks, and a C-clamp, the Bindomat is priced at \$18.00.

E. Leitz, Inc.  
304 Hudson Street  
New York 13, N. Y.

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Leitz Elmar, 50mm f3.5 uncoupled	21.50
Leitz Elmar, 135mm f4.5 coupled	95.00
Leitz Hektor, 75mm f1.9 Tele	140.00
Leitz Hektor, 28mm f6.3 W.A.	110.00
Leitz 35mm f3.5 ctd, W.A.	61.50
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Contax II, f2 Sonnar, case	225.00
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135mm Sonnar, f4 Tele for Contax	175.00
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Zeiss Contameter, for Contax II	35.50
Zeiss Universal Viewfinder, for Contax	74.50

### 35mm CAMERAS

Agfa Karat, f2.8 Xenar R.F.	\$ 49.50
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Perfox 44, f3.5	32.80
Perfox 55, f2.8 ctd	90.00
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## All-Metal Cut Film Holders

Drop it in the lake or bake it in the sun, the new Alkon "49" cut film holder is built for hard service. Made of "flight weight" magnesium, it is unaffected by dampness, will not warp or split, and is light and easy to handle.



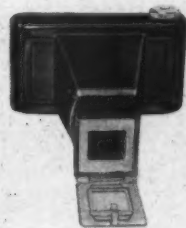
The all-metal construction of the Alkon is even carried to the hinge on the loading flap and, because there is no fabric to wear, long trouble-free operation is assured. An easy-to-load metal film sheath holds film flat, while a finger recess opposite film notches aids, film removal.

What's more, photographers using the new holders should have fewer baggy coat pockets since the holders are 20% thinner than conventional types. They will fit all press or view cameras designed for standard double cut film holders and at present are being made in two sizes: 4x5" at \$4.40 and 5x7" at \$6.00, including Federal Tax. Later, the Alkon "49" will be available in 2 1/4x3 1/4" size at \$4.00, and 3 1/4x4 1/4" at \$4.20.

Vernier Photo Supply  
41 Maiden Lane  
New York 7, New York

## Black-and-Whites from Kodies

Paper enlargements from 35mm slide transparencies, Kodachrome or black-and-white, are a simple matter with the new 35mm Cine-larger. Simply load the Cinelarger with regular No. 620 roll film, place a 35mm or Bantam



slide in the front housing, and expose with a photo-flood bulb. Eight copy negatives to a roll, each 2 1/8 x 2 7/8", are the result, and from these contact prints or enlargements can be made. Also, if desired, color slides may be copied on No. 620 color roll film.

The 35 mm Cinelarger is priced at \$19.95, tax included. Other Cinelargers are available for 8mm and 16mm movie film—price, \$18.95 with the tax. For free picture folder No.RMP write . . .

Testrille Instrument Co.  
57 East 11th Street  
New York 3, New York

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## GADGETS, KINKS AND SHORT CUTS

### Mounting Printons

Some photographers have been puzzled as to the proper method of mounting their Printon prints. Although dry mounting tissue does not do a good job in this respect, Printons are easily mounted by spreading a thin, even layer of rubber cement over the back of the color print, then pressing it firmly to the mounting board. One good method consists of covering the Printon with a clean sheet of paper (after it has been placed in the proper position) and then using a print roller to assure good contact between the print and its mount.

### Cure For Dark Slides

If the dark slides of your film holders stick and are difficult to remove or insert, try rubbing



an ordinary wax crayon over the slide edges. Often the thin coating of wax is all that's needed to make them operate smoothly again.

### Spring Housecleaning

At this time of the year housekeepers all over America are housecleaning . . . and if you're a neat man in the darkroom, it's about time that you, too, got around to giving the place a thorough cleaning.

Remember that dust is the arch-enemy of high-quality darkroom results, and that the more you get rid of, the better off your photographic processing will be. Those pipes that run along the ceiling ought to be washed off, and all working surfaces and floors—yes, and the walls too—should not only be wiped off thoroughly, but washed down with soap and water. This is a good time for equipment

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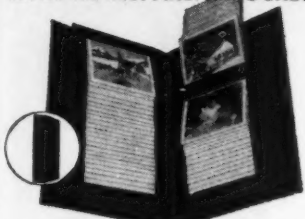
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appraisal and overhaul, so check over your darkroom equipment and fixtures; repair what you can and send the rest to a reliable photo shop for rejuvenation.

### Reasonable

Many amateur photographers do not like it because fixing bath formulas are written so that they require the use of 28% acetic acid. Although mention is often made to the effect that this 28% solution can be made by diluting three parts of Glacial Acetic Acid (99.5%) with eight parts of water, photographers find this practice of 28% confusing. They wonder why formula mixing cannot be simplified by avoiding the intermediate 28% step.

Glacial Acetic Acid is too strong to add to sodium sulfite—there is an ever-present danger of sulphurization. If Glacial Acetic Acid is used in this way, it can only be done by adding it *very* slowly, stirring continually and vigorously as this is done. The standard 28% solution is weak enough to eliminate most dangers of this nature—and it does not attack the skin and nose the way it does in concentrated form.

### Improved Image Brilliance

A drop of oil on the ground-glass of your camera, rubbed almost dry with a clean, lint-



less cloth or tissue, will improve the brilliance of the image and make focusing in dim light easier.

### "Camera Bake"

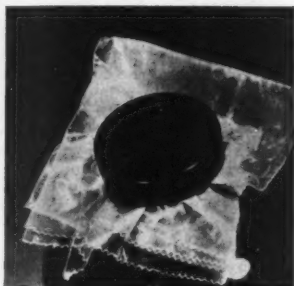
Did you ever hear of a "camera bake"? Well, they do it in the tropics: It is advisable to "bake" a camera there once a week, if you want to be on the safe side.

The "baking" is done by opening the back of the camera, opening its aperture to its widest F: stop and setting the shutter open on "Time." The camera is then placed so that the sun's rays can enter the lens to reduce the fungus which may be present in the balsam cement between the optical elements. If this "baking" is not done, the fungus growth may ultimately etch the lens severely.



### Bottle Seal

One way to prolong the life of your photo solutions is to use a sheet of strong wax paper



folded over and placed under the cap of the storage bottle. This will not only help keep the solution from oxidizing, but if the cap happens to be a metal one, it will be protected from rusting as well.

### Carry Cartridges in Cigarette Case

Loaded film cartridges should not be carried in one's pocket or at the bottom of a gadget bag exposing them to dust, dirt and lint. An inexpensive leather cigarette case which holds a full pack and has a zipper closing makes an ideal case in which to carry the cartridges. The

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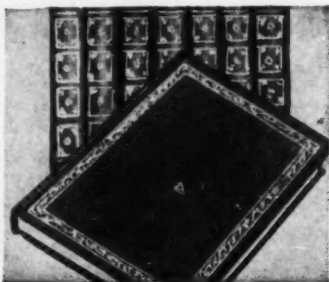
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average case will accommodate 3 cartridges and take up less room than 3 individual metal cans in which the film is usually carried.

### Inexpensive Print Dryer

An effective an inexpensive print dryer can be made from a roll of paper towels and wax paper, both of which are in most every kitchen. Unroll a length of paper towels and place a sheet of wax paper on top of it. Squeeze off your prints and place them face down on the wax paper. Then roll up the whole thing and place a few rubber bands around it. When the towels get linty from being wet and dry so often, tear that part off the roll and begin a new, clean length.

### Portable Carryalls Protect Lighting Equipment

The same compactness which most amateurs seek in their still and movie cameras, as well as projection equipment, should also reflect itself in the method of caring for movie lighting accessories. Cardboard containers are fine for packing, but poor for storage and safe portability.

You don't have to be a professional trunk maker to turn out an acceptable job, for ready-made suitcases often can be revamped, or partitioned to take various accessories.

One used by the writer measures 12" deep, 18" wide and 32" long, and is designed to accommodate four nesting 18" No. 4 Victor reflectors, two Kodaflector units with standards, half a dozen 50-foot extension cords, along with sufficient fuses and extra plugs.

For proper balance in carrying, the large reflectors are housed in the center of the case, with two 7" partitions on each side. This area accommodates the sockets and short extensions, as well as the arms for the Kodaflectors and their No. 2 adapters. The metal reflectors are strapped flat on the bottom, with the large bowls placed over them. There is room for several No. 2 or No. 4 photofloods beneath the bowls, and a small spotlight nests in one of the partitions. White-painted cardboard for reflectors fit the inside lid of the case.

Extra photofloods can be carried in an extra case, a small discarded ladies' overnight bag being ideal for this purpose. Since the light standards are rather lengthy, these may be slipped into a zippered canvas bag similar to the tripod case. All three containers fit easily in the back of the average car.

Where considerable lighting equipment is owned, it is usually wise to use two, or even three, separate carriers for easier packing rather than make up one big bulky case. Where proper design permits each piece of equipment to have its place in the trunks, danger of losses through misplacement of lighting accessories out on location are averted.

If you lack the inclination, the ability, or the workshop in which to build your own carryalls, sketch out a crude design of the desired layout, including accurate inside dimensions, call on your local trunk maker and let him build one to fit your exact specifications. Remember, however, that easy portability is far more desirable than streamlined design.

## How This Month's Cover Was Made

THIS MONTH'S cover is reproduced from perhaps the smallest color transparency every used on a MINICAM cover. Mounted in its original 2 x 2 Bantam mask, the transparency was delivered to the color engravers by a messenger boy whom we have never seen since. In view of the fact that color engravers like tiny color transparencies the way mountain lions like ice water plunges, we suspect the worst.

Be that as it may, the original proofs of photographer Ted Boker's cover pic-



ture are among the most attractive we have ever seen. The color slide itself came to us from the Chicago International Color Slide Exhibit where it was one of last year's prize winners. Originally made on size 120 Ansco Tungsten Color Film, the transparency was cut down to fit a Bantam mask. Mary Meals, the model, is the daughter of a doctor living in San Marino, California.

"The first time I saw Mary," writes Ted Boker, "was in a restaurant in Pasa-

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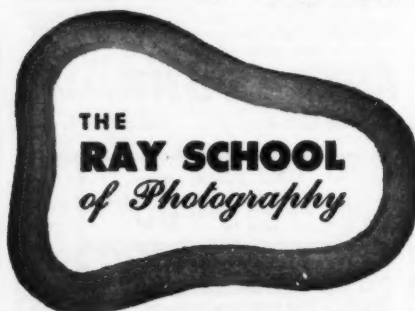
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dena. She and her family were dining at the next table and I spent so much time watching her that I forgot to eat my own lunch. Finally I got up courage enough to walk over to their table and introduce myself. Then I asked permission from Mary's mother to photograph her daughter some Sunday afternoon.

"Since I had no lights of my own at the time, I used a friend's studio and a Ciroflex Model "B" camera I had recently acquired. The idea for the picture was suggested by Mary herself when I saw her eating a Popsicle. A sucker was substituted simply because it was a hot day and Popsicles melted too fast.

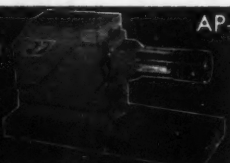
"To the best of my memory, a single 1,000 watt, 3200 Kelvin light was placed about 60 degrees to the right of the camera for the main light source. A fill-in spotlight was placed to the left, and behind the camera. The third light was a spotlight behind and to the left of the model, shooting down at about 80 degrees. No filter was used; the exposure was calculated by meter reading to be 1/10th second at F:8.

"By profession I am an auditor with the Los Angeles Community Chest; with amateur color photography, of course, as a favorite hobby. Some eighty of my color slides (at least ten of which are slides of Mary) have been accepted in various slide salons. To appear on a MINICAM cover, however, is the best break an amateur could ask for. I am sincerely grateful. So, incidentally, is Mary." (signed) Ted Bokor

Editorially speaking, Ted, acceptance of your slide for a cover isn't exactly a "break." The slide earned its own acceptance because it measures up to the professionally-made transparencies we have used.—The Editors.

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## Give Your Pictures An Abstract Frame

(Continued from page 32)

with other negatives for the purpose of creating interesting abstract pattern frames. Once you have produced a pattern frame you like, the rest is simple. First, the center area is masked out while printing from the abstract negatives. This provides a frame for the straight portrait negative which is then printed in while masking off the area all around it. With a little practice, the abstract negative and the straight portrait negative will blend together so well that it is difficult to detect their separate origins.

## What Projector Should I Buy?

(Continued from page 67)

dent on lamp wattage, reflector and lamp housing design, optical condenser system, and the lens itself—that counts.

For maximum screen illumination, the lamp housing includes a polished spherical reflector behind the lamp, and a condensing system of one or more lenses placed between the lamp and the film. Both serve to concentrate the light evenly on the film with as little waste as possible.

An important consideration is the heat given off by the lamp. To dissipate this heat, projectors are "convection cooled" by means of ventilation openings in the lamp housing, while many have cooling fins as an integral part of the housing. In addition, some sort of glass heat filter, usually a part of the condensing system, is provided to absorb the heat and protect the film: Although still projectors generally use low wattage lamps, if high wattage lamps are used, say above 300 watts on a 2x2" projector, a blower fan is required to remove the heat for adequate protection of the slide or film-strip. It is frequently wired so that the lamp will not light unless the fan is operating.

To prevent stray light from flooding the projection room, lamp housings have special light traps or baffles. Also, many projection lamps have a black coated top

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to absorb the stray light directed upwards. The housings are designed for ease in changing bulbs.

The projector lens is usually purchased as part of the projector equipment and generally you are given a choice of focal length. A 5" lens is considered standard; under certain conditions, however, you may want to use anything from a 2" to a 24" lens. The accompanying chart shows different lens focal lengths needed for various projection conditions.

Since the quality of most projection lenses is good, this aspect needs little discussion. The projection lens is designed to provide good illumination, a flat field and sharp definition. Most manufacturers are now equipping their projectors with coated projection lenses as standard equipment, while some even offer coated condensers. By decreasing light loss due to internal reflections, the coated lenses transmit maximum illumination and give increased screen brilliance.

The sturdiness of the lens mounting

and the ease and precision of focusing vary with the price range of the projector. On the whole, even the simplest of projectors is adequately designed in this respect to be quite satisfactory.

The diaphragm or "F" rating of the lens is also important. The average 5" projection lens is rated at F:3.5. Longer focal length lenses usually have smaller apertures and require greater lamp wattage to produce a screen image of equal brilliance. For example, an F:5.6 lens requires 2½ times more lamp illumination than an F:3.5 lens.

Slide projectors are classified by the size and type of film transparency each is designed to handle. Thus there are filmstrip projectors, 2x2" slide projectors, and the familiar 3¼x4" lantern slide projectors, to mention a few. Many are designed to accommodate two or more sizes and types interchangeably, or with adapters. The type and versatility of the projector you select will depend on the negative sizes of the cameras you own.

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perfect companion for easy projection . . . the Golde REFLEX BINDER for all 2¼x2¼ transparencies.

Before the popularity of 35mm cameras, the  $3\frac{1}{4} \times 4$ " size was in almost universal use. Later, however, the  $2 \times 2$ " size has become the popular standard. The size refers to the dimensions of the slide which the carrier of a projector will handle. For instance, a  $2 \times 2$ " slide mount is usually used for all 35mm negatives—single and double frame—as well as Bantam transparencies ( $1\frac{1}{16} \times 1\frac{1}{2}$ "). The  $3\frac{1}{4} \times 4$ " slide mount can be used for all transparency sizes up to about  $3 \times 3\frac{3}{4}$ ". Recently several projectors have been made available for  $2\frac{1}{4} \times 2\frac{1}{4}$ " transparencies and are fast becoming popular with reflex camera owners. The dimensions of the slide mount for this size transparency are usually  $2\frac{3}{4} \times 2\frac{3}{4}$ ".

Most slide projectors have a carrier accommodating two slides side by side—while one slide is being projected, a second slide is inserted into the other position. Other projectors provide only for one-at-a-time insertion of slides, while at the opposite extreme are the projectors with automatic changers. These are loaded with a stack of slides in correct order, which are fed into place at the push of a lever.

Single or double frame—or both—film-strip projectors, as the name implies, handle strips or rolls of unmounted 35mm film. Feeding of the film through the projector is usually done with a sprocket drive. Some projectors are designed to accommodate only slides or only filmstrips, while others handle both.

## Speed Flash Synchronizer

(Continued from page 41)

attached are then screwed securely into place and can be connected to the flash unit with the tripper cord. The assembly is now ready for use.

To take a picture the mirror has to be down in place. This makes it possible to focus the camera and protects the film from light when the shutter curtain is open. The curtain tension is set on "2" and the curtain aperture set on "0" or open. After focusing, inserting the film

# WANT

## THEATER-QUALITY PROJECTION?



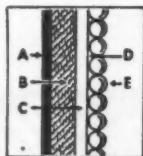
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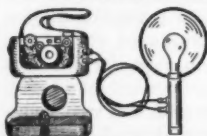
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holder, setting the iris diaphragm, and pulling the slide (Fig. 8) the shutter lever is pressed. The mirror flies up, actuates the Microswitch thus triggering the electronic flash. An instant later, after the picture has been taken, the curtain closes. With the curtain open and with the curtain tension set on "2" the film is exposed for approximately  $\frac{1}{40}$  of a second, but since almost all pictures taken with electronic flash are taken in subdued light, no image is recorded on the film except when the flash goes off. When the mirror goes up and trips the switch, there is approximately a 50 millisecond ( $\frac{1}{20}$  second) time lag before the curtain begins to close. timing makes it possible to use this mechanism to fire flash bulbs as well as to trigger electronic flash outfits. If "regular" flash bulbs are used, the pictures are taken as described above; if "flat peak" bulbs (those made expressly for use with focal plane shutters) are used, then pictures can be taken at all shutter speeds with reasonable assurance of good synchronization. This simple accessory on the Graflex camera vastly improves its versatility.

Fig. 8 shows the shutter curtain in position ready to take a picture. The curtain tension is set on "2," the mirror is down, and the curtain is on "O" or open. Fig.

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9 shows the camera after the picture has been taken. The mirror is up, it has actuated the switch thus triggering the flash and taking the picture, and the curtain has closed thus protecting the film from the light.

No specific measurements have been given here since each installation will have its own adaptation. The general principles are given in using this very simple device to excellent advantage. These switches will carry a considerable amount of current for their size, and all the other parts are sturdy and durable.

### Keyed Emphasis

(Continued from page 48)

ing is employed, it is impossible to burn in grain that may exist in the original negative.

2. Since there is no negative between the light source and paper in flashing, corners and sides in a picture can be darkened much faster by this method than by dodging (burning in) through the negative being projected.

3. If the background in a negative is objectionable, it can be done away with completely and a flashed background substituted in its place. This is accomplished by blocking out the entire background with any of the opaque liquid products on the market. First the outline of the subject is drawn on the negative with a fine brush or pen, then the rest of the background is filled in with opaque material. Some of the liquid frisket products now on the market (*Liqua Frisk't*, C.P. Laboratory, 6909 Harper Ave., Chicago; *Photo Maskoid*, Andrew Jeri Co., 265 West 54 St., New York) sell for about \$1 a jar and are ideal for this purpose. With the background blocked out, the subject image is given normal exposure. Then, since the background received no exposure to light due to the frisket, it can be flashed in any manner desired. If, later on, you wish to restore the negative to its original state, the frisket can be instantly removed by touching it with the tacky side of a piece of scotch tape. The emulsion will be undamaged.

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**Keep The Movement**

(Continued from page 30)

picture again creates the feeling of liveliness and activity for the spectator.

We can roughly define four factors as inducing the "movement":

1. Line
2. Spaces and masses (or the relative sizes of masses)
3. Change of texture
4. Gradation of white tones to darker ones and vice versa. The most important is the first. Our eye automatically connects points in space. As it does so it seeks the answer to, how far? how big? how many? If the points are so arranged that lines going through them will always converge on some point, then the eye will remain in the picture and not wander outside it because its interest is satisfied. This cannot be achieved by the haphazard placing of points, they must be so ordered as to achieve this unity of line and also a balance in weight.

A line of perspective, for instance railroad tracks vanishing into the distance, creates the strongest feeling of movement. In this case the movement is into depth.

Next is the diagonal. Take our old friend the lamp post. Let it stand at an angle across the picture, and immediately it becomes more interesting. But a perfectly vertical or horizontal line added to it would have the opposite effect. Vertical and horizontal lines *arrest* movement.

Let's see what happens when we add some of the other factors to our lamp post.

First of all to be aware of it at all we have to be aware of the space between it and the other things. These spaces are masses. Upon how we arrange them in relation to the lamp post depends the balance of the picture. If there is a little space to the left of the post, (so "weighing" down the left side of the picture with the post) then there must be a greater area on its right so as to give back to the picture a sense of equilibrium. The large mass on the right will have balanced the smaller one on the left with the additional



weight of the lamp post's darker tones added to it. This balance is created by moving the camera around until the image in the ground glass is made up in these proportions.

Let us consider these space intervals further. They are as important as a comma in a sentence, or a pause in a musical work. If they are blank, then the effect is one of sterility, or at best, an emptiness providing contrast. But if properly used with valuable details in them, they can add greatly to the satisfaction found by the eye in a balanced composition.

This consideration of detail leads us on further. Supposing that the house behind the lamp post was merely outlined. It would then be merely a flat image. The house would be only silhouetted and give us no sense of three dimensions.


Contour lines as formed by a gradation of tone or at times changes in *texture*, give a feeling of depth. For then the lines appear to flow around the object as well as along its edges. In this way the shape of a hill is revealed by the contours created by outlines of shadows or changes in texture.

A mass of flat grey sky behind our lamp post would not have added life to the picture, nor on the other hand would too great a contrast in the clouds. Masses that are either too flat or too severe *arrest* movement. But given some interesting cloud formations, then just the lamp post and the clouds might have made a good picture.

By varying the light on the clouds, either through waiting until the sun sank lower or using a filter to gain contrast, their appearance could have been changed. A change in light will bring about a variation in size, shape and texture. Moods may fluctuate with the quality of the light.

Through accentuating the texture of the various things in the picture it will gain what we have previously called movement or life. By adding some people, or waving branches this illusion can be further increased.

However, one thing has to be kept in



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mind; any elements added to the picture must contribute to its harmonious whole. The composition must be a working unity. If it is successful then the movement it creates for the spectator may actually succeed in distorting the size of the picture.

The onlooker will feel himself to be a part of the scene, and what more could the photographer want?

The lesson to be drawn from all this is that the success of the picture depends on its planning on the ground glass before the shutter release is pressed.

If you ever see footsteps making a circle round a flower—a good photographer has been there.

## Cliches Verres

(Continued from page 85)

to give the resulting print a certain blotchiness.

surrounded this simple technique when it was first discovered, but in looking back it gives a good indication of just how far photography has come in a mere hundred years. Today any schoolboy can, with these instructions, produce a picture that made the great nineteenth century masters gasp in wonder.



"Never mind that stuff about watching the bird . . . just pay attention to your exposure, get the lighting balanced, stop your lens down to at least F:8, and be sure to pull the slide."

## Spotlights for Flash

(Continued from page 60)

cifically for this use, it is well to choose a kind that requires a minimum of remodeling. An important question to keep in mind is: How easy will it be to change bulbs? In the model shown this is achieved by simply flipping open the hinged top.

In actual use, the spotlight cord is plugged into the extension outlet of the flash gun. If very long cords are used, it may be necessary to increase the gun's amperage with extra batteries.

Now about exposure calculations. Although the more narrow beam of the spot concentrates the light flare, the small reflectors are not too efficient with the flash bulb. As a starting point for exposures use the normal flash guide number. It will not be far off. Remember, however, that the spread of the beam has a decided effect on the exposure and it will be necessary to do some experimenting before the technique of using the flash-spot is mastered. The focusing lever of the spot can be marked off in stops and a flash guide number assigned to each for perfect exposure calculation.

Before using the spot for flash, it is best to become so thoroughly familiar with its scope and possibilities that it is unnecessary to use the regular projection bulb to set up a lighting scheme. The value of the spot-flash is that it allows use of spotlighting in conjunction with ordinary flash where regular current is not available. However, in unfamiliar conditions where sighting over the edge of the spot is not sufficient to place it correctly, it is possible to study the lighting effect with fair accuracy by holding an ordinary flashlight in front of the fresnel lens and directed at the same angle as the spot. This will show the direction of shadow fall, and familiarity with the spot will tell how big the light area will be at that position.

A precaution to bear in mind is that peanut bulbs are designed for batteries only. Never ignite them from regular home circuits.



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## The Big Eye

(Continued from page 87)

Just for the record, the camera uses a standard fifty-foot reel of 5 1/2-inch wide aerial film. The film is processed in standard equipment and printed in a flat plane printer.

According to Dr. Robert E. Hopkins, associate professor of optics at the Institute, several improvements on the original model are planned. These will include the addition of a large high-speed shutter (present shutter has a high speed of 1/45



THE LIGHT from one No. 22 flashbulb was sufficient to illuminate a row of poplar trees 600 feet away in this night photo taken with the F-1 lens. Notice the excellent definition maintained almost to the extreme edges of the circular field.

second) and coating the lens surfaces to improve contrast as well as lens speed.

Developed primarily for night photography in aerial work, the camera's military possibilities are easily seen. Of these, its use with infra-red light is probably the most intriguing, since it would permit vast night surveys of enemy territory without knowledge of enemy observers.

A more immediate application will be the new camera's use in photographing fluorescent screens in X-ray work. Here the new lens, so much faster than conventional ones, will reduce the amount of X-ray to which a patient must be subjected. In astronomy, too, the new camera should find a place; in photographing meteors, for example, it would have the advantage of covering a larger field, and could pick up fainter meteors than slower optical systems.

While the present model is definitely not one you'd care to pack along to a basketball game, there's an outside chance you may be using a smaller version of the new camera yourself one of these days. Right now, the Institute is developing a small two-inch focal length job which they say will be much better adapted for every day photography, such as sports events and other action shots.

## Bagdad On A Subway

(Continued from page 36)

so the small camera was my solution. My preference is a Contax II with an F:1.5 lens. Although this speed isn't necessary, it's helpful in very bad light. For candid quick shooting, I like to use a Leica with an F:3.5, 35 centimeter wide angle lens where the light permits—and a Rolleiflex for more static conditions in subways or where people are close by, as in a restaurant where the camera can be unobtrusively focused and used from a table.

I have found that there is practically no good information available on photography in bad light. Only by experimenting yourself, can you learn anything about this field. You don't need super-fast lenses, although they are a help. The limitations of Rollei type cameras with F:3.5 lenses can be overcome by using fast-working developers and exposing for fifths, tenths and twenty-fifths. One such formula is the paper developer, Dektol, which I like to use mixed one part solution to one part water at 72° for about five minutes development. The grain is really not objectionable. If the emotion is there, why worry about the grain?

I like the 35mm camera best because it hampers me less and it leaves me free to work rapidly. Fast lenses, ease of focusing, ability to accept long focal length as well as wide angle lenses, ease in handling—all these make the miniature the best choice for this type of work."

At 23, Ed Feingersh feels he has made a start in the wide open field of bad light photography. It will be interesting to see what he does with his eyes and his

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## Basic Color Faults

(Continued from page 45)

how often even advanced amateurs express doubts on this score. An underexposed transparency lacks shadow detail and the colors appear too dark. Also, the color reproduction is often faulty, and the transparency may show an overall preponderance of one hue. A bright light is necessary to view the transparency, also. Figure 1 is representative of correctly exposed transparencies. There are no washed out areas and it is easy to see detail in the shadows. The image has a full scale of tones and the colors are well reproduced. Admittedly, there is a slightly bluish cast in the background, but this is not unduly objectionable. Had a yellow filter been used to eliminate this bluish background haze, the flesh tones would have become too yellow.

In Figure 2, the main subject—the boy—obviously is underexposed. His face is too dark and bluish, although the latter may have been due in this case to too bluish illumination. We shall have more to say about this example later under lighting, but it is clear that the exposure increase necessary for the main subject would overexpose other areas of the scene.

Now what can be done to assure the highest percentage of correct exposures? First, it must be stressed that color films are slow in speed. In daylight, color films generally (although the types differ slightly) require about thirty times the minimum exposure necessary for the fastest black-and-white films. It is for this reason that manufacturers insist that reversible color films be used in cameras with F:6.3 lenses or faster. And even an F:6.3 lens is not fast enough under many conditions.

With each roll of color film the manufacturer supplies exposure data. The film speed number (ASA Exposure Index) is given for those who use a photoelectric exposure meter. Also, exposure tables are included which give lens diaphragm set-

tings and shutter speeds for different lighting conditions. An expanded table, including several films is given on page 45. The unfortunate thing is that the manufacturer's exposure instructions too often go unheeded. The so-called "secret" of successful color film exposure lies right in those tables and in the other data of the instruction sheets.

To remember that in bright sunlight an exposure of 1/50th second at F:6.3 is recommended for a given color film is not enough. For "average scenes," as they are usually described, this exposure is correct. But the same bright sunlight on the beach provides considerably more light for exposing the film than under average scene conditions. Therefore, the lens has to be stopped down, usually about 1/2 lens stop. Just the opposite prevails when the scene consists largely of dark subject matter, such as deep green foliage. Here the lens often must be opened about 1/2 lens stop or more depending upon the lightness of the main subject matter.

### Lighting Faults in Color

We have intimated that proper exposure and lighting of the subject go hand in hand. However, one should not confuse subject lighting with the amount of light on the subject as a whole. A subject can be just as poorly lighted in bright sunlight as on an overcast day. As a matter of fact, in color photography probably more difficulties arise in lighting a subject in bright sunlight than under most other conditions. The reason is that subject lighting concerns the relative distribution of the light on the scene, and does not depend upon the brightness conditions. Direct sunlight can create brilliant highlights and strong shadows as well. When this brightness range exceeds about 1 to 25 or so, the color film cannot record all of the brightness values. Moreover, when the subject is so strongly lighted that the exposure scale of the film is taxed, there is no allowable exposure tolerance. A more even distribu-

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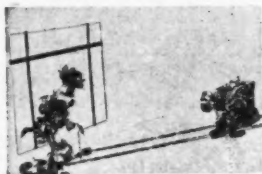
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tion of illumination, therefore, is indicated for more than one reason.

If you have made color shots at the beach you have no doubt observed how evenly the light is distributed. The highly reflective sand and water fills the shadows with light, and with reasonably correct exposure the final transparency shows a pleasing range of shadows, middletones and highlights, all with detail. This uniform subject illumination is ideal for color. At the beach such lighting is entirely natural, but in most other cases it has to be acquired artificially.

The lighting in Figure 2 has too wide a range for color photography. Plenty of light was available but it was not distributed properly over the subject. The backlighting is effective, but if enough exposure had been given for the boy the highlight areas would have been excessively overexposed. A single reflector could have been used to direct light into the main subject area, thus balancing the lighting on the boy with the rest of the scene.

Reflectors for balancing the subject lighting are easily made. Sections of cardboard (about two feet square) are covered with "tinfoil" and about four such sections are assembled. The tinfoil is first crumpled and then opened out, without destroying the irregularities of the surface. These are then mounted on the board with glue. The uneven surface of the foil diffuses the light, therefore, does not reflect strongly into any one area. The reflector sections can be assembled so that they fold together for ease in carrying. Another type of reflector is simply a large surface covered with matte white paint.

Reflectors are not always necessary. A lot depends upon the circumstances at the time of exposure and the way the subject is posed. If possible, it is best to wait until the sun is behind a cloud so that the light is more diffuse. And in posing or arranging the subject, try to prevent heavy shadows. For example, instead of positioning a girl with a wide brim hat in sunlight, even if the sun is

behind a cloud, take the hat off, or tilt it backward to eliminate deep shadows on the face. If the sun is directly overhead, the subject can sit on the grass, or anything suitable, and then by leaning backwards the illumination is made uniform and undesirable shadows avoided.

In black-and-white photography subjects are often placed in the shade to prevent unflattering shadows on the face. This is sometimes possible in color photography. The only danger is that shadow illumination is frequently bluish since most of the light is derived from the blue sky and not from direct sunlight. This causes transparencies to acquire a bluish cast that can be very objectionable.

Shadow fill-in light can be provided by the synchro-flash technique. Blue flash lamps are used to balance with the color quality of daylight. However, if the flash is held too close to the subject an artificial effect is obtained. The main subject stands out against a much darker background which does not give the appearance of being illuminated by natural daylight. If the flash is positioned away from the subject so that the exposure must be determined by the daylight illumination, then the flash illumination only contributes to filling in the shadows, and its use is hardly detectable.

#### Incorrect Light Sources

Color films are made for use with light sources of particular spectral characteristics. Daylight color films, for example, are balanced for exposure under natural occurring daylight consisting of a mixture of direct sunlight and bluish skylight. Tungsten type color films are balanced either for photographic flood illumination (3450 K) or for tungsten lamps having a color temperature of 3200 K.

When tungsten type film is used under daylight, without a special conversion filter over the camera lens, the results invariably are excessively greenish-blue. If daylight film is used under tungsten illumination the results are reddish-yellow.

These examples represent the extremes in using the wrong light source for a

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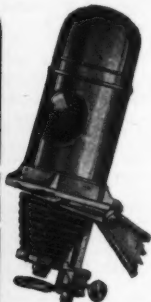
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given type of color film. They are the most easily overcome of all the difficulties in this category, since conversion filters are available that allow tungsten type films to be used in daylight and vice versa. The problem requires no elaboration since all one has to do is acquire the proper filters and make use of them when needed.

Somewhat more disturbing is the problem of knowing whether or not the light is of the correct color quality when the proper type of color film is used. Everyone knows that daylight varies in quality with the season, the time of day, the sky and atmospheric conditions, the altitude and so on. How is one to know if the daylight is suitable at the time of exposure for daylight type film? Without special equipment one can only judge the conditions and be guided by instructions or experience. When there is a definite haze in the atmosphere or the sky is overcast, it is a good general rule to at least employ a haze filter. First results may be too "cold" or bluish, indicating that a slightly yellowish filter, such as a Kodak CC13 or CC14 would have been a better choice. At high altitudes it is also a good rule to use a haze filter or one of the yellowish "CC" color temperature conversion filters, according to conditions.

Color temperature meters are available which enable one to approximate the color quality of the prevailing light. (See "What's Your Color Temperature?" Feb. MINICAM—Ed.) If the meter shows that the light is too high in color temperature, a CC13, CC14 or CC15 filter will be required depending upon the extent of deviation from normal. If the color temperature is too low, a CC4, CC5 or CC6 filter will be necessary to raise the effective color temperature. Some of these filters absorb enough light to require an increase in exposure. The manufacturer's data should be followed in such instances.

### Incorrect Use of Filters

The mere fact that filters are necessary under certain conditions introduces another chance for error in color photog-



raphy. But when one employs color compensating or conversion filters advisedly, any abnormal result can be traced usually to a wrong filter selection or just bad judgment.

It is the indiscriminate use of filters that causes most of the faults of amateur color photographers. You must be sure not to use filters in color photography on the basis of experience gained in black-and-white work. A yellow filter in black-and-white photography will darken a blue sky, but in color one only adds yellow to all colors in the scene. This statement leads to a useful rule in applying filters in color photography. *The color of the filter used shifts the color balance of the film in the direction of this color.* In other words, a bluish filter with daylight conditions causes a transparency to be bluish, etc. Therefore, when the light available is yellowish, a bluish filter will cause the transparency to be more bluish than it would have been if the filter were not used. But since the result without filter would be yellowish, a bluish filter of proper density will correct for this excess yellow, producing a normal result.

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**SAVE DEALER'S PROFIT**—Latest bargain-packed Directory 25c. Camera Guide, GPO 796-A New York City.

**SURPLUS FILM HANGERS**—4x5, stainless steel, 37c each; check or money order. Intype, Dept. 1, 8687 Melrose Ave., Hollywood 46, Calif.

**PRESS AND CANDID** speed cameras. Roll film and movie cameras and accessories at lower prices. Large variety of equipment and supplies for the professional and amateur at 50% to 80% off. Send stamp for list. Photo Nook, 1443 O Street, Lincoln, Nebraska.

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**FOR SPEED.** Universe Pressman, 4x5 \$39.90 Dealers or Direct. Skytower Box 210-C Chicago, Ill.

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S.V.E. Model RK 2x2, 300	49.99
S.V.E. Model AAA 2x2, and film	49.99
VIEWLEX APS, 2 1/4x2 1/4 Slide Projector, f3.5 coated lens, 150 watt lamp	34.99

## ENLARGERS

DEJUR I, 2 1/4x3 1/4, f4.5	\$99.50
DEJUR VERSATILE II, 3 1/4x4 1/4, f4.5 lens	64.50
ELWOOD SP2, 5x7, 200 watts	84.00
FEDERAL 289, 2 1/4x3 1/4, f6.3 lens	25.45
FEDERAL 279, 2 1/4x3 1/4, f6.3 lens, double condensers	34.50
KODAK PRECISION 4x5 up to 2 1/4x3 1/4, New	89.50
4x5, New	119.99
LEITZ POCOMAT 18, 35mm	109.50
OMEGA DII, 4x5, no color, 127	127.89
OMEGA DII, with Colorhead	133.00
PRECISION 4x5, 2 1/4x3 1/4	42.89
f6.3 lens	16.25
SOLAR Model 125, 2 1/4x3 1/4	47.50

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BOLEX 8, f2.8 Tvar, Case	210.00
CINE KODAK 28, f2.5	89.50
CINEMASTER II, f3.5 Wollensak	27.99
CINEMASTER II, f3.5 Wollensak	35.99
KEYSTONE KB, f3.5 Wollensak	29.99
KEYSTONE KB, f3.5 ctd. Wollensak	42.89
MAGAZINE CINE KODAK, f3.5 ctd.	109.00
REVERE 60, Turret, Magazine f2.8	109.99
REVERE 70, Magazine, f2.8, B&H	89.99
REVERE 88, f2.5 ctd. Wollensak	49.99
REVERE 99, Turret, f2.8 B&H	74.99

## 8MM MOVIE PROJECTORS

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DEJUR 750, 750 watts, still picture projection, "Reverse" coated f1.8 lens	99.99
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KEYSTONE 750 watts	89.50
KEYSTONE 88, 300 watts	32.99
KODASCOPE 8-33, 500 watts	79.99
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UNIVERSAL PC500, 500 watts	49.99

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CINE KODAK 8, f1.9	69.99
KEYSTONE A-7, seven elem. built-in f2.5 Wollensak lens	48.99
KODAK MAGAZINE, f1.9	119.00
REVERE 16, Magazine, f2.5 Woll.	99.99
VICTOR MODEL 4, coated f1.9 Kodak lens	169.00

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BELL & HOWELL Model 87, 500 wt.	\$59.50
KEYSTONE C-28, 300 watts	48.99
KEYSTONE A-72, 300 watts	48.99
KODASCOPE 8-33, 500 watts	79.99
KEYSTONE 750 watts	84.99
Latest B & H SHOWMASTER, 750 watts	199.50

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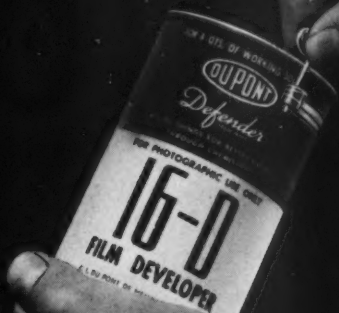
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